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SOME FURTHER CONSIDERATIONS CONCERNING THE TREATMENT OF NEUROSYPHILIS *

C. EUGENE RIGGS, A.M., M.D.

ST. PAUL

While dogmatism has no place in medicine, it is especially unfortunate in the weighing of evidence and the evaluation of data in the tentative endeavor now being made to determine the most efficient form of therapy for the treatment of neurosyphilis. Cotton manifests the true scientific spirit when he says that with a spirit of open-mindedness every method should be given a thorough trial, and that it is only by continual experimenting with new ideas that we can hope for progress in this new line of endeavor. If an apology were necessary because of my selection of this much discussed subject, it were best made in the words of Southard: "That no more important human problem now exists than syphilis, and that neurosyphilis is a highly important fraction of the total problem."

The three principal methods of procedure in the treatment of nervous syphilis are intraspinal, intracranial (subdural or intraventricular) and intensive. Are all of these methods of equal value, or is any one of them what we might call outstanding? Certainly the ultimate procedure, the ideal method, is yet to be evolved. Intraspinal medication has never had a fascination for me, neither have I been a victim of this belief. I have simply been impressed with the results I have observed which were in such striking contrast to those formerly obtained from the routine forms of procedure. While I have been interested in the physiologic discussion concerning the value or usefulness of intraspinal medication, yet the observation of the fact that patients in whom intravenous medication had utterly failed made apparently good clinical recoveries under the administration of the former, outweighed in my mind all theoretical or academic discussion. In over 800 intraspinal injections, we (Riggs and Hammes) have never seen one untoward result. In the light of this experience, the statement of Halliburton that "the use of salvarsan [arsphenamin] in locomotor ataxia and similar late syphilitic affections via the cerebrospinal fluid has been abandoned, as it is fatal not only to the syphilitic organisms but also to the patient," has been shown to be absolutely baseless as to fact, neither do I agree with Sachs "that there is nothing which the intraspinal method achieves that cannot be accomplished by the intravenous." Fordyce tells us that he has seen generalized exfoliative dermatitis, persistent forms of gastro-enteritis, nephritis and obstinate jaundice follow intensive medication. Neither in regard to safety, then, nor in results obtained, is it to be preferred in properly selected cases to the intraspinal method. No one believes that it should be used to the exclusion of the intravenous method.

Under normal conditions, the choroid plexus is believed to be impermeable to the passage of all but a few drugs, but this does not always obtain, because in certain cases remedies introduced intravenously do reach the cerebral and spinal tissues. Barbat says that by the reduction of intraspinal pressure the permeability of the meninges to arsenic can be greatly increased and that arsenic can be made to pass into the spinal fluid in more than 96 per cent. of the cases suffering from tabes and paresis; he also believes that the antibodies in the blood serum which in this way gain access to the spinal fluid play a more important part than the small proportion of arsenic contained therein. Should this contention prove well founded, the potentialities of intensive intravenous medication are very greatly increased. Dr. Sachs' assertion that serious forms of paresis and tabes have not been favorably affected by intraspinal injections, and that nothing has been accomplished by them that could not be obtained by the intravenous method is absolutely at variance with my experience during the past four years. Personally, I have known of no advocates of the Swift-Ellis procedure to claim that paresis could be cured, although Southard states that by means of systematic intensive treatment, even "paretic neurosyphilis seems to have been cured." "Theoretically," says the same author, "we should approach all cases of neurosyphilis without bias or nihilistic prejudgments." In the past, we have repeatedly stated that the results of intraspinal treatments in tabes have been notable, that in over 70 per cent. of our cases (Riggs and Hammes) both blood and spinal fluid have become negative and that tabetic pain, gastric crises, bladder symptoms and the ataxic gait have been relieved as the result of this treatment. As to paresis, we have insisted that this form of therapy greatly increased the number of remissions and modified favorably the course of the disease, enabling many patients to pass their last days in the home environment.

Treatment of paresis by intraspinal injections has been the method adopted at Bloomingdale since 1912; thirty-five cases have been treated by Dr. Amsden since that time. Two were given intraventricular injections. Of eighteen cases in which no remission occurred, in six there were prolonged periods of arrest of the progress of the disease, fourteen patients died with an average duration of the recognized course of

* Chairman's address, read before the Section on Nervous and Mental Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

the disease, two years and four months. Remissions of six months to two and a half years or more have occurred in 40 per cent. of the cases; long periods of arrest in 17 per cent. "These results," says Amsden, "justify persistence in the use of a form of treatment which has thus far been the only ray of hope for the sufferers from an invariably fatal disease. Cotton states that with the original method of Swift and Ellis, 33 per cent. of the patients were distinctly benefited and enjoyed remissions of from two to four years, and that a small number are still normal. He also thinks that this form of treatment is the most efficient one for tabes and syphilitic meningitis. These statements of Amsden and Cotton are in striking contrast with that of Finlayson, who says that the Swift-Ellis method was tried at the State Hospital at Warren, Pa., for two years and that the indifferent results did not justify its continuation. Fordyce believes that it is to be preferred in tabes, meningitis, meningomyelitis, meningo-encephalitis and in optic atrophy with positive fluid. That optic neuritis in the absence of all findings both clinical and serologic may sometimes be benefited by treatment is shown by the report of the following case recently seen with Dr. Hammes: A man 40 years of age; paper-hanger; contracted gonorrhea twelve years ago; at that time there were some sores on the penis which were regarded as nonspecific. For five months he had suffered from failing vision. This was so marked that he had to be led around. There were no symptoms of syphilis—clinical or biologic. Treatment gave prompt relief. He is again at work and can match paper without difficulty. Reasoner, Fordyce and myself have reported cases of syphilitic meningitis and meningomyelitis occurring respectively four and six months after the initial lesion which resulted in death. Fordyce thinks that intraspinal treatment given at this time acts more rapidly than in older infections and offers the only chance of cure and prophylaxis against later degeneration. Cases of nervous syphilis occurring in the florid stage of syphilis in spite of intensive medication, according to this writer, either die from intense meningitis or become candidates for paresis, tabes or cerebrospinal syphilis. All such should be treated intraspinally. Cases of abortive tabes, where the fluid shows no pathologic change, we have seen greatly benefited by intraspinal medication, notwithstanding the generally accepted belief that it is contraindicated in these patients.

All neurologists are familiar with the notable work done by Cotton in neurosyphilis; it is earnestly to be hoped that many other state hospitals will be stimulated by it to a spirit of research and healthful medical activity. Red tape, archaic routine and the dominance of the idea that custodial care, not treatment, is the true function of a state hospital, paralyzes all progress and creates the deadly atmosphere of an almshouse rather than that of a psychopathic hospital. Wardner, Hammond and Sharpe, Cotton and others, have called attention to the intracranial method in the treatment of paresis. Both Hammond and Cotton regard it as the most efficient procedure in paresis. The former believes that injection into the ventricle is much to be preferred to the subdural method, especially if there be thickening of the pia. The latter uses both the subdural and the intraventricular, beginning with the former for three or four doses, then giving at least five injections into the ventricle. In fifty-one cases treated last year by Cotton and Stevenson, some too far advanced for therapy to be of avail, remissions were obtained in twenty cases. All of these were able to leave the hospital and only two have returned. Intracranial methods allow of larger doses of arsphenamin and more frequent administration; usually a small dose is given (0.3 gm.) intravenously and the serum reinforced with 1 mg. of arsphenamin. The various serums, the Ogilvie, the mercurial after Byrnes, the Swift-Ellis, arsphenamin in physiologic sodium chlorid solution, have been tried; while cases have received benefit from all, the Swift-Ellis has proved the most efficient (Cotton and Stevenson). In early paresis, the preparetic stage, where the process is limited to the meninges and the spirochetes have not invaded the cortex, the Swift and Ellis method will prove efficient. In confirmed forms of the disease, the effect of this treatment is not lasting and patients suffer relapse; it is not sufficiently intensive.

The most popular form of therapy in neurosyphilis is that of intensive medication with draining of the spinal fluid. The beneficial results obtained by repeated injections of arsphenamin and mercury have been explained on the supposition that the impermeability of the choroid plexus to drugs has been overcome by mass attacks Teutonized, as it were, by brute force, so that it was no longer able to resist the passage of spirocheticidal drugs to the spinal fluid. By intensive treatment is meant injections of arsphenamin twice a week (from 0.3 to 0.6 gm.) along with continued injections of mercury. Solomon says that in the Massachusetts series, intravenous injections are given at least twice a week and that from forty to fifty, even to a hundred injections, are sometimes given in a period of a few months in conjunction with mercury and iodids. The dictum of Southard that "no one can now successfully make a differential diagnosis between the paretic and the diffuse nonparetic forms of neurosyphilis in many phases of either disease, even with all laboratory refinements," makes it imperative to treat all cases in which differentiation is impossible. But this does not reach the crux of the matter. Grave symptoms found in paresis or tabes are by no means necessarily indicative of serious anatomic change. This is true as regards loss of memory, disorientation and apparent mental disintegration in the former or the characteristic clearly defined symptoms of the latter; irritation and functional perversion of neurons, not their destruction, being the probable cause. Meningeal inflammation plays an important rôle in the evolution of symptoms not only in cerebrospinal syphilis but in paresis and tabes as well. The clinical syndrome, therefore, be it ever so grave, does not of necessity mean a deteriorated brain or a degenerated cord. The only way, therefore, of doing justice to all because of this camouflaging of the incurable by that which can be cured or at least definitely ameliorated is to treat all.

The New York Psychiatric Society recently appointed a committee, of which Dr. Dana is chairman, to investigate the problem of the early recognition, treatment and prevention of paresis. The importance of this subject will be better appreciated if one considers the whole range of syphilitic mental disease, namely the psychoses resulting not only from paresis but from cerebral syphilis and tabes as well. The average number of patients treated for syphilitic mental disease in the state hospitals of New York during the fiscal year ending June 30, 1917, was 1,554, and it has been estimated that the economic loss to the

state was $5,398,644.99 (Pollock). Because of this menace to the social order, it has been proposed to establish a hospital near New York City for the detention and treatment of syphilitics. Since Wile and Stokes maintain that probably every case of florid syphilis shows changes in the spinal fluid and that clinical symptoms of neurosyphilis of this period can probably be determined, and since also the same claim holds equally true with reference to the primary period, and as it is not improbable that these patients are potential candidates for syphilitic mental disease, it is believed by many that early intensive treatment may prevent involvement of the nervous system. The future of the syphilitic and the possibility of anticipating or arresting degenerative change, Fordyce thinks, depends largely on early and regular examination of the spinal fluid. My experience is not in accord with the assertion of Sachs "that there is absolutely no correspondence between a change in the cerebral content and the condition of the patient." Usually clinical improvement and biologic reduction sustain a direct relation the one to the other. Neurologists are familiar with certain cases in which this does not occur. Ayer points out "that frequently one may be able to reduce the cells and proteids to normal, and yet the Wassermann reaction persists and the patient shows no advancing symptoms." Fordyce calls attention to the relation existing between the clinical symptoms and spinal fluid findings in early syphilis associated with an acute meningitis, namely to the improvement corresponding with the biologic reductions; to the temporary remissions occurring in paresis and taboparesis, in which the spinal fluid shows no change aside from that observed in the cell count and the globulin; to the improvement that may occur in the spinal fluid while progressive mental deterioration goes steadily on. Aside from the two exceptional conditions noted he believes "that there is an intimate relationship between the clinical symptoms and the fluid findings."

Gains states that "In the serologically negative cases, there is corresponding clinical improvement, although frequently clinical improvement or apparent cure may take place even in the presence of a positive Wassermann." The most vigorous arsphenamin therapy may, according to Southard, fail to render the spinal fluid negative, yet the clinical condition may improve so greatly that the patient may be regarded as clinically recovered. For the past two years I have had under observation two cases of cerebrospinal syphilis, in both of which the blood became negative and the cell count and globulin normal, but in spite of the most persistent treatment the spinal fluid gave a positive Wassermann reaction. While one patient made a clinical recovery, the other has constantly suffered from subjective symptoms indicative of nervous syphilis. Unfortunately, as to the real significance of the spinal tests, their relation the one to the other, their prognostic importance and their response to treatment, but little is known. Without doubt, they are indicative of a pathologic condition in the nervous system. "They do not all represent," according to Southard, "the same inflammatory products and chemical conditions. They are prone to occur independently and they disappear under treatment at different rates." "The gold precipitating substance," says Weston, "is not the Wassermann producing substance," neither are the globulins and albumins believed to be the same. The colloidal gold test may become negative while all the other tests remain positive. Then again these may be practically negative, while it continues positive (Solomon). Solomon and Koefod tell us that the cell count is of no prognostic importance in syphilis of the nervous system unless there is an improvement in the other spinal tests, neither is it of aid in a diagnosis between paresis and cerebrospinal syphilis, nor does it give information as to the duration of the activity of the process or its severity.

Out of all this chaos, one fact seems to be patent: The rendering of these tests negative under treatment indicates a disappearance of the inflammatory reactions from which they arise and an arrest of the disease. As to the permanence of this improvement, with our present knowledge, it would be unwise to predict. Neither can one develop a spirit of optimism with reference to those patients in whom the biologic reactions are only partially or not at all influenced by treatment. It is well to recall the remarkable case of paresis reported by Tuczek; in this paretic, there was a complete remission for twenty years. What nature has once done, she may do again. While this is an exceptional instance and can afford but meager comfort, yet it must be kept in mind when considering these cases of clinical recoveries in which there is no correlation between laboratory findings and clinical betterment. I cannot help but feel that in all these cases of clinical improvement without serologic changes, a recurrence of symptoms with a progression of the disease ever impends and is ultimately inevitable. "Any method," says Lautman, "which produces a negative serology in addition to improvement of the clinical symptoms may be deemed efficient."

All of the three preceding methods (the intraspinal, intracranial and the intensive), in the light of our present experience, may, therefore, be called efficient. This is particularly true as regards cerebrospinal syphilis and tabes dorsalis, and even in paresis, the most hopeless of all the manifestations of syphilis. The accomplishment of these two purposes has in a measure met with success—certainly not with a lamentable failure. It is a well known fact that the percentage of remissions is much greater in treated than in untreated paresis. In 127 patients observed by Cotton, remissions occurred in about 4 per cent. of the cases. In a summary of 300 untreated cases of paresis, but five, says Solomon, left the hospital able to work, while in the treated cases, about 25 per cent. were able to leave self-supporting. The Massachusetts workers, according to him, do not claim cures, but they do claim "improvements." Paresis, he believes, is amenable to treatment to the extent of the restoration of the ability to work for a period, and this he says "is something of an achievement." According to Dr. Pearce Bailey, "treatment has a decided effect not only on the symptoms of paresis, but also on the working capacity of the individual." Dr. Fordyce thinks that little can be expected from the intraspinal or any other form of treatment in paretics, when the stage of institutional care has been reached. "The most that can be hoped for is temporary arrest of the encephalitis." It is in the cases of meningo-encephalitis—the preparetic type—in which this method is efficient. Hammond and Sharpe regard intraventricular injections as superior to both the intradural and intraspinal methods in the treatment of paresis, and they believe that in skilled hands it is practically free from danger. Solomon states that the Massachusetts workers have obtained improvement by every method used. Cotton, who has had an unusually extensive experience during the last

four years, regards the intracranial method (both subdural and intraventricular) as the most efficacious in the treatment of this disease. Since he has had no serious results following its use, he thinks it should be continued.

The present attitude of those most experienced in the treatment of nervous syphilis is best expressed by Southard: "While it has always been conceded that treatment would greatly help cases of diffuse and vascular neurosyphilis, the utmost pessimism has existed concerning the results to be obtained by treatment in cases of tabetic and paretic neurosyphilis, . . . and though it has been by no means settled in the minds of the various workers in this field as to what the ultimate results of such treatment will be, . . . still the majority of men who are treating these cases systematically feel very much encouraged."

THE PERSONAL EQUATION IN PSYCHIATRY *

L. B. PILSBURY, M.D.
LINCOLN, NEB.

In one sense of the term personality may be said to be everything in insanity. This is not to say that insane patients never fit well into types; it simply means that the study of personal character, of responsive reactions to environmental stimuli, of conduct and expression, are and always will be of paramount importance in investigations seeking to establish the psychologic status of the individual. It means, furthermore, that the hardest things to extinguish in an individual are the things that mark him off from other individuals. It may be said that this is a matter of inference only, but it seems to be in accordance with the facts. There is nothing strange about this, since memory plays as large a part in experience as experience does in personality. Conscious memories form the principal line of demarcation between individuals, and with extinction or great reduction of conscious memory we have concomitant narrowing of the field of consciousness. To just what extent unconscious memory comes into play to enliven the stream of consciousness is very difficult to say. A greatly confused and apparently amnesic patient with hallucinations of hearing has some basis for the recognition of the voices which he hears. We say that he imagines the voices and this is true enough, but how can he imagine that which he is not aware that he has ever heard? As a matter of fact, memory, either conscious or unconscious, supplies the necessary factors of recognition and convinces him that the sense perception, albeit false and objectively unreal, is the sound of a human voice. To be sure, the patient may maintain that it is the voice of Deity or of the King of Siam, whom he has never seen, but this proves nothing except that he is familiar with the human voice or else that he attributes to Deity or the Siamese King a mode of expression somewhat different and resembling, for example, the notes of a pipe-organ or of a nightingale. For obvious reasons, the congenitally deaf do not hear voices. Whether they have or imagine that they have sense perceptions which stand to them for a hypothetic human voice is another question.

Can personality be of etiologic significance in the determination of insanity? It can be, if by personality we mean that individual set or bias which creates a presumption in favor of either normality or abnormality in reaction to difficult circumstances, or in other words a fortunate or an unfortunate outcome of an adverse situation. The working out of the problem is a matter of personality, but what, forsooth, is personality? Modesty forbids an attempt at the colossal task of adequately defining this concept, but let us say that it has to do with aptitudes both inherited and acquired (provided there is such a thing as an acquired aptitude), with knowledge and its expression, or so to speak with knowing what to do and how to do it. These things enter into personality, which is made up largely of habitual modes of thinking, feeling and acting, of habitual ways of looking at things and doing things. What is it about the person that causes him to become insane? Not to overstate the case at all, if we could answer that question we would be flooding the field of psychiatry with such a light as shines now only on the exact sciences. As fast as we are able to introduce factors of precision, we will discard the speculative and the inferential, but with such a wealth of speculative material at hand we are sometimes in danger of forgetting that surmise and conjecture cannot fill the place of well grounded categorical affirmations. The field of fancy is filled with devious paths which do not always lead to the straight and narrow exit.

We cannot but be impressed by the tyranny of personality when we compare the introcentric and subjective precocious dement with the exocentric and objective maniac, but after all we cannot tell which component in the etiology has the greater effect in determining the psychosis, whether the personal make-up or the hypothetic disturbing factor, though very likely the former rules. In other words, given a set of similar adverse factors in two persons, each will respond with the psychosis for which the stage was set in the beginning. Now perhaps this is true and perhaps it is not, but at any rate it is a fascinating conjecture which leads us dangerously near to determinism. If certain people are to become insane and are to become insane only in a certain way, what is the use of all our therapeutic endeavor? A liberal psychiatry can hardly rest under the restraint of such freezing philosophic dogma.

It is sometimes very plausibly said, even by the laity, that there is nothing strange about a given person becoming insane, because he always seemed like that kind of a person, the insanity being in character or keeping, so to speak, and simply an exaggeration of existing traits or tendencies. Lay observation is sometimes acute, though without reasonable criteria as to causation. It often partakes of the mysterious and of the trivial. While it is impossible to deny that grief, worry, sunstroke or change of life may have something to do with insanity, it is highly improbable that they will cause it in the absence of the necessary determining factors. Why do some men with disease of the heart or the lungs or the liver become insane while some other men with disease even of the brain do not become insane? It is indeed astonishing what gross insult the brain will sometimes tolerate without resulting mental disintegration, and this brings us to the very interesting question as to whether the essential adjustment to adverse factors is made by the brain or by the mind or by both together.

* Read before the Section on Nervous and Mental Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

The assumption of dualism in operation leads us to look for psychophysical parallelism, often a barren search, it must be confessed, but with points of reasonable expectation. The idea of effect without cause is abhorrent and a rational dualism seems to extricate us from the dilemma with which we are confronted, if we assume that physical injury or disease can cause only physical disorder and that insanity, therefore, is purely psychogenic in origin. It spares us the necessity of supporting the difficult thesis of materialism on the one hand or of idealism on the other, and allows us to bridge in some sort, at least, the gap between matter and spirit. This naturally calls for some sort of reactive mechanism between the two which we will not attempt to define, but which we hope some day to see elucidated. Any physical cause to be effective in the production of insanity must in some way affect the flow of ideas and we do not know how physical states can influence the flow of ideas, though they doubtless can do so very profoundly. We prefer to think of man as something more than a mere congeries of biologic adaptations, and yet we must not lose sight of the fact that perhaps the greatest achievement of modern psychiatry is to be found in the biologic point of view. I refer, of course, to the point of view that regards the human organism as a whole, both ontogenetically and phylogenetically, and takes account of all discoverable factors. To the extent that the psychiatrist keeps in mind all the elements of his problem, he will probably succeed in justly estimating both the cause and the character of the reaction. Fallibility of judgment is inherent in the human mind, which is no very dependable instrument at best and, therefore, to be used with due reference to a fairly large percentage of probable error.

ABSTRACT OF DISCUSSION

DR. WILLIAM O. KROHN, Chicago: The suggestion that if we could know the personality we would know something of the causes of the insanity, is very good. We do know that certain types of personality predicate what the insanity will be if the person becomes insane. In taking the reaction tests as to the speed at which the nervous impulses are transmitted from the brain, we know that if one individual becomes insane he will have a certain type of insanity, while another will have, say, the slowed up type of insanity. I found that carried out in the study of children in the public schools, where we find two distinct types: the explosive motor type and the sensory type. One child is bubbling up to express himself; he is always ready to say something whether he knows what he is going to say or not. Then, there are the others of the sensory type who hear everything, but are rather slow to express themselves. We know that the motor type of boy, if the proper environment for his development is not available, will develop a certain distinct type of insanity, while the other type, who holds himself in, receiving impressions and never able to express himself, will manifest another abnormal, distinct type of personality. Through the environmental and personal education we can at least determine to a large degree what type of personality the individual possesses, and in large measure overcome the handicaps with which the organism is invested when the individual is born.

DR. JOSEPH BYRNE, New York: The great objection I have to discussions on psychiatry and on questions pertaining to psychanalysis and psychology in general, is that the audience do not seem to grasp them. That is a great loss to the psychologic study of medicine because we come here to learn. The doctor has raised pertinent questions in regard to personality. In the study of any question connected with neuropsychiatry, I want to know first what the personality is. There is an objective and a subjective personality, but what do we mean by the personality and the modifications of personality? The second question is the dual hypothesis, which I was rather glad to hear the essayist mention. We are taken up altogether too much with mechanistic conceptions in modern medicine. Dr. Haldane, one of the foremost physiologists of any age, gave mechanistic views a severe blow. He ridiculed the mechanistic conception as having too much weight in our physiologic and biologic laboratories. If there is any one conception that brands a man as being philosophical in his tendencies, it is the capacity to consider things as a whole and also as parts. As to bridging the gap between matter and mind, I do not think the doctor would succeed in that. Men in the past have tried to fathom that question and have absolutely given up all attempts at trying to bridge the chasm.

DR. RALPH REED, Cincinnati: One point brought out in the paper has always been interesting to me, and that is with regard to the relationship between the physical origin and the psychogenic origin of mental diseases. In psychiatry there seem to be two schools with distinct demarcation between them, one of which, when considering any mental disease the etiology of which is in doubt, shows an inclination to insist that the origin must be physical, the other showing a tendency to seek for some psychogenic origin. Two or three striking facts bear on both phases of this question. One is the tremendous destruction of tissue seen in many cases of organic brain disease, with very little mental change. Sometimes this is so striking that it is absolutely astonishing. On the other hand, we see cases in which a very slight amount of toxin introduced into the system is productive of profound changes in the individual's character.

DR. ALBERT E. STERNE, Indianapolis: One of the most dangerous things teachers and psychiatrists do is to promulgate a doctrine which the laity will gladly take up, even more than it already has, to wit: That a mental complex can stand on its own feet. If we are to be practical teachers of medicine and practical men in our consulting rooms and at the bedside, we must stand squarely on the basis that presupposes and establishes a fundamental organic condition for mental expression. It is obvious that there are psychogenic causes at times, such as emotions, particularly the emotion of fear, which produces changes in our mental attitude and expression. Nevertheless, we must hold fast to the fact that there are changes in the brain of a cellular character which are the fundamental causes of what are commonly termed mental diseases. I believe strongly in the materialistic side. While recognizing the value of psychogenic factors in the production of this materialistic phase, it is a mistake to think that the so-called physiologic changes which are shown by individuals are independent of organic changes in the cells. I do not believe that that hypothesis can be maintained. If we have gotten anywhere in the teaching and practice of psychiatry it has been by holding firmly to the fact that there is an organic basis for these diseases.

DR. HAROLD N. MOYER, Chicago: An old philosopher once said that when the understanding failed we used a word. I have enjoyed the discussion that occurred here because of the facility with which some of my colleagues can use words. I have not that faculty. As to the psychogenic and the somatic origin of mental disease: Mental disease is not tangible. It is not a thing purely. It is a human concept in the mentality of the psychiatrist. The facts are perfectly clear that some mental disorders are due to somatic and some to physical causes. Another equally obvious fact is that some are psychogenic in origin. We ought to announce that positively and stand resolutely on that proposition. Then again, there is a third group of disorders that are mixed—they are in part psychogenic and in part somatic and physical in origin. It is the business of the practical psychiatrist, the man treating mental disorders, to unravel the tangle in the case, and if he cannot have a mental grasp of the physical and mental side of his patient, he is not fit to treat him. In the practical treatment of psychiatric disorders this problem is presented in every individual case, and the success with which you solve it is the success with which you meet the indications in that particular case.

DR. BEVERLY R. TUCKER, Richmond, Va.: I am of the opinion that we have not laid enough stress on the hereditary factor in mental diseases. The doctor spoke of inherited aptitudes. I had occasion at one time to investigate the manufacture of artificial eyes, and it was found that it could not be very successfully carried out in this country without the importation of Bohemians trained for generation after generation in this particular work. I believe that it is an inherited aptitude, and that the simpler aptitudes involving the motor factors are the easiest to carry, and then we come to the ones below. I do not believe that people "go" insane. I believe that when physical disease is induced, for instance by toxemia, as by alcohol, this releases inhibition and then we see the individual stripped of all his veneer, and the man who becomes maniacal under alcohol has a maniacal tendency. We do not lay enough stress on the inheritance factor. I am of the belief that neither poison nor anything else can make a person insane unless he has an inherited tendency. In other words, a normal mental mechanism remains a normal mental mechanism, and the only influence that disease has on it is to cloud it. Any well-formed syndrome that is manifest has always been present. A person does not "become" insane; he has always been insane, and some particular determining factor makes that apparent.

DR. LAWRENCE B. PILSBURY, Lincoln, Neb.: I purposely avoided going into personality very much; personality is too big a problem. We do not know what personality is, we simply know some of its manifestations. As to somatic and psychogenic causes, they are very hard to separate. It is as hard to separate the potentially somatic cause from the potentially psychogenic cause as it is to bridge the gap between the body and the mind. Dr. Sterne speaks of fear. We do not know what fear is, but we know some of the manifestations of fear. Probably some of the ductless glands have something to do with fear. Dr. William James, in elaborating his theory, points out the fact that we are, so to speak, afraid because we run; that we do not run away from an object, a bear for example, because we are afraid. We first begin to run—we first react—and then afterward we realize that we are afraid. Of course, there is simply an idea or an emotion with a physical expression or manifestation, but we cannot have physical reaction without a cause, and the cause in this instance is a stimulus, probably an optical stimulus—we see a bear and begin to run, and we are afraid. The whole thing has a material and physiologic basis, and how to separate the emotion of fear from its manifestations I do not know.

Dangerous and Harmless Color Blindness.—In a recent investigation made by the United States Public Health Service, an important distinction was made between persons who are only slightly color blind and those who are dangerously color blind, that is, unable to distinguish at all times between red and green. The results of the investigation form a working basis on which examiners may discover members of the latter class and exclude them from all government positions in which the reading of colored signals is a part of the work. It was found by various tests that the latter class includes persons who are able to see three or fewer colors in the spectrum, those who see more than three colors but have the red end of the spectrum so shortened as to prevent the recognition of a red light at a distance of 2 miles, and those with a central scotoma for green and red. In making the tests, the health service officials used the Edridge-Green color lantern in preference to colored yarns. In the course of the tests, 1,000 persons were examined by means of the lantern, in order to determine both its value and the effect of refractive conditions and lesions of the eye on color perception. The examinations also revealed the fact that color blindness occurs in about 8.6 per cent. of men and 2.2 per cent. of women, if we exclude those who are able to distinguish five colors in the spectrum. Among workers in occupations requiring the ability to recognize colored signal lights, dangerous color blindness prevails to the extent of 3.1 per cent. among men and 0.7 per cent. among women. It appears the most frequently in eyes affected with mixed astigmatism, and the least frequently in those that show no refractive error.

SOME VITAL PHASES OF FRACTURES OF THE JAWS*

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The subject of fractures of the jaws is one that has attracted the attention of medicine since the days of Hippocrates. It also is a subject that was of considerable interest to dentistry long before it became a profession. Indeed, many of the principles laid down by Hippocrates can be used today with a moderate degree of success. It was Hippocrates who first originated interdental ligation. It was also Hippocrates who condemned the use of bandages alone as a procedure in the treatment of fractures of the jaws.

In presenting the subject of fractures of the jaws at this time, we shall touch on only two or three vital phases of the subject. The first phase which we shall attempt to discuss will be the process of repair. We use the word "discuss" advisedly, because in our present state of knowledge of the subject, we can only discuss it. We are not in a position to make any dogmatic statements as to just what takes place in the process of repair of bone.

Just what takes place in the behavior of the tissues in the process of repair of bone is a question offering a diversity of opinion. There seems to be an antagonistic state of opinion about the theory of bone growth. There are two schools that are contending for the maintenance of their theories along this line: One contends that the periosteum is a limiting membrane without the property of osteogenesis; the other maintains that the periosteum is an osteogenetic membrane and can go on functionating, developing and nourishing new bone.

Havers, in 1692, gave the first accurate account of osseous structure and described the periosteum as simply a connective tissue, limiting and vascularizing membrane.

Antoine de Heyde, in 1684, made some observations on frogs and determined that callus was formed by calcification of a blood clot extravasated around broken bone ends.

In the middle of the eighteenth century, Duharnel brought out the generally accepted theory of the function of the periosteum. His view was that the periosteum became thickened and succulent around a fracture and by pushing the new tissue in among the fragments it formed a callus. In his experiments, he discovered a layer of cells lying next to the bone. To this layer, he gave the name cambium layer. This layer of cells between the true periosteum and the bone is recognized in the bone work now being done in Europe.

Macewen[1] is emphatic in the statements that the function of the periosteum is simply a limiting membrane and does not have the property of osteogenesis. He made many experiments on dogs. In these he seems to prove that the periosteum does not produce new bone. In many instances, he reports that the whole radius was removed, leaving the periosteum. He finds in these cases that after several weeks no new bone is formed. In his experiments, he finds no place where the periosteal flaps produced new bone. He also finds that where the periosteum was

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1. Macewen, Sir William: The Growth of Bone, New York, The Macmillan Company, 1912.

not intact, there was a marked hypertrophy of the bone, showing that periosteum limits bone growth.

These experiments of Macewen are substantiated by similar experiments by Cohn and Mann. Their experiments included transplanting of bone denuded of periosteum into muscle, into the medullary canal and into newly made bone defects. Some of these transplants were covered with periosteum and others were not. It was found that isolated bone grafts did not act as foreign bodies and were not absorbed after sixty days, but showed a tendency to outgrowth. They also made experiments in which the periosteum per se was transplanted around the carotid artery. This did not show bone proliferation. They came to the conclusion that the periosteum was not at all essential to the healing of a fracture.

Other investigators in this country have made similar experiments with similar results. These investigations, with others, represent the work of the contenders of the theory that the periosteum is simply a limiting membrane. The other class of investigators in bone work contend that these experiments must have been carried out with simply the outer layer of the periosteum, which is a limiting membrane, and that the inner layer, or the cambium layer, the layer which Hey Groves terms the epiostial layer, or the osteogenetic layer of the periosteum, was not considered.

Our experiments at the University of Michigan hospitals do not accord with the theory of Macewen. We have found that periosteum transplanted into the muscle tissue will produce new bone. This new growth seems to have all the properties of true bone; its blood supply, its bone cells and the process of true osteogenesis seem to be normal.

This deposition of bone differs from other calcific deposits which may take place in the body, such as in the spleen, liver, kidney, etc., under certain pathologic conditions, so that we feel quite positive that under suitable conditions, true bone may form from the periosteum.

Hey Groves summarizes as follows:

> The periosteum is chiefly a limiting membrane of the bone. The dense bone can live, grow, undergo repair, and produce fresh periosteum after the latter has been removed. In young bones it is possible to remove the periosteum in such a way as to produce an osteogenetic membrane, this being probably due to the lifting up of the epiosteum with the periosteum. In adult bones this is impossible except after trauma or an inflammation.

In the repair of fractures of the jaws, we feel that the retention of the periosteum is highly desirable, because its removal takes away much of the epiosteum, and, also, because it affords a ready means of vascularization.

While there is a wide diversity of opinion regarding the function of the periosteum in bone repair, all investigators seem to agree as to the function of the compact and cancellous bone in the process of repair.

Ollier proved that quite apart from the periosteum and the marrow, compact bone could live and produce new bone and undergo the callus repair of fracture. The deep surfaces of bone, like the superficial surfaces, are capable of osteogenesis under suitable stimulus.

Axhausen has shown that the wide haversian canals contain active osteoblasts and favorable conditions for new bone formation. It has been observed in gunshot fractures in France that when the ends of the fragments have been exposed and laid bare, by stimulating the ends by a drill, in a short time buttons of granulation tissue would be pushed out and would soon cover the entire ends of the bones. These ends could then be put in apposition, and union of fragments would result. In our clinics, we have had to resort to this method in some old ununited fractures, in which we have had the process of repair again started. It is our opinion that compact bone, if it has the proper blood supply, is quite independent of either endosteum or periosteum for bone growth and for bone repair.

The whole process of repair of bone is fundamentally that which takes place in the union of the soft parts. In fractures of the bone we may have primary union, or, we may have secondary union by granulation tissue; this granulation tissue differs from granulation tissue of the soft parts in that it is osseous in character. The injured tissues, infiltrated with blood, soon become invaded by leukocytes and effused blood plasma. Firbrinous coagulation takes place and the ends of the fragments are embedded in a dense, ill defined mass of firm, cellular exudate. The periosteum becomes much thicker, softer and more vascular; a thin layer of gelatinous or viscid liquid is found between it and the bone for a short distance from the edge of the fracture. In about fourteen days, the effused blood is completely absorbed, leaving a firm, dense, cellular, vascularized, partly organized mass of granulation tissue. The bone then undergoes rarefying osteitis, and the fracture becomes fixed. This is known as the "provisional callus."

While this process is going on, similar changes are taking place in the cancellous bone, and the "internal callus" is formed in the same manner. Ossification then takes place, thus completing the process of repair. While the callus is forming, the process of repair is going on in the contiguous soft parts, and they regain their normal condition and function.

Very briefly, the foregoing is what seems to take place in the process of repair of fracture of the jaws. Occasionally there may be an excess of rarefying osteitis, and a lack of production of osteoblasts, so that the callus may not ossify. In these cases, the bone is absorbed for a considerable distance between the ends of the fragments, and we have established a false joint or pseudo-arthrosis.

When an open or compound fracture becomes infected, suppuration ensues, and the process of repair is slower, because the suppuration of the wound delays or prevents the formation of the provisional callus, and it has to depend on the formation of the internal callus, which is not so favorable for rapid repair. In these cases, the callus is larger and more irregular than that which we see after simple fractures, when the process of repair takes its normal course.

Another phase of this subject which we shall consider briefly is some of the complications which occur in fracture of the jaws. Fractures of the jaws will differ from fractures in other parts of the body in that they are more liable to infection on account of the close proximity to the bacteria-laden fluids of the oral cavity. We rarely find infection present in simple fractures of the jaws, but it is quite common in compound fractures.

A factor which must be considered in relation to infection in fractures of the jaws is the presence of alveolar abscesses, which may be existing at the time of the fracture or may be superinduced by the injury. These will greatly delay the process of repair and

should be eradicated before repair can be expected to take place.

In fracture of the maxilla, the antrum is frequently involved and may become infected. This makes another serious complication. It means clearing up the infection in the antrum before the process of repair will go on in a normal way.

Another rare complication in fracture of the maxilla is the fracture of the brain case, in which coma or even death may result immediately. Secondary hemorrhage is one of the complicating problems that is quite common in fractures of the jaws on the battle fields of Europe. This comes on after suppuration has been established and is the result of infective inflammation causing a disintegration of the hemostatic thrombosis, or ulceration or sloughing of the walls of the vessels. This secondary hemorrhage may occur any time between the beginning of the process of repair and the complete repair of the fractured blood vessels.

The laceration or severing of sensitive nerve trunks will lead to anesthesia of all of the parts peripheral to the fracture, and neuralgia is a common sequela.

Trismus is an early local complication that is nearly always present. This is usually brought on by the violence that is produced on the soft tissues and the temporomandibular articulation. In extreme cases, where it is not possible to make the reduction at once, the trismus may be so pronounced that a general anesthetic may have to be resorted to in order to obtain sufficient relaxation to make a diagnosis and subsequent reduction.

In gunshot fractures, there are other local complications, such as extensive laceration of the soft parts, which will greatly add to the difficulty of making a diagnosis and prosecuting the treatment. In these cases, there will usually be greater splintering and fissuring of the bone than in the fractures in civil practice. It is reported that in every case of gunshot fracture of the jaws, infection of the wound ensues immediately, which greatly interferes with the process of repair.

In the work at the front on fracture of the jaws, the history shows that many of these cases are not treated until some time after the injury. Here a new complication arises. In these cases, frequently large masses of cicatricial tissue have formed, and a marked deformity is present. Under these conditions, a clear and definite diagnosis may be difficult, and the successful reduction of the fracture made arduous.

Another local complication, which is almost universal in gunshot fractures of the jaw and sometimes met with in civil practice, is loss of substance of the bone. Here again difficulties arise in making a successful reduction and subsequently retaining the fragments in normal relation.

Under the general complications of fractures of the jaws, there are a few factors that must not be overlooked. There are certain diseases which, when present, seem to hinder the process of repair. Such diseases as syphilis, alcoholism, tuberculosis and such chronic diseases as will cause a marked lowering of the vitality of the patient. These conditions will always delay union and may prevent it entirely.

It will not be out of place, perhaps, in this brief paper to say something regarding the prognosis in fractures of the jaw. The prognosis must vary greatly according to the location of the fracture, the character of it, the complications which are present or which follow and the age and resistance of the patient. The time which elapsed between the injury and the reduction of the fracture will also influence the prognosis. The prognosis should take into account several points: First, the effect of injury in respect to a favorable or unfavorable termination of the case; second, its simple or complicated course; third, the influence of each complication; fourth, the time required for recovery; and, fifth, the result as to normal occlusion of the teeth and normal functions of the jaws. The younger the patient, the more favorable the prognosis, because in the young fractures unite more easily and promptly than in the adult. If the fracture has existed two or three weeks previous to its reduction, and if there is considerable movement of the fragments, consolidation will not take place as rapidly after the parts have been brought into normal relation as it would if reduction were made at the time of the injury.

The presence or absence of infection plays a very important rôle in the duration of the treatment. In a simple fracture of the mandible where the fragments remain or are replaced in perfect contact, repair will take place at once without any untoward symptoms, without deformity or malocclusion, and without detriment to the functions of the jaws. If the fragments are not quite in apposition in simple fracture, but nearly so, the prognosis will be almost as favorable, although it will take somewhat longer for repair to take place and there may be some slight deformity manifested in malocclusion of the teeth.

All compound, comminuted and complicated fractures, which in their very nature present additional obstacles in the way of complete reduction, may not present so favorable a prognosis. In fractures of the superior maxilla, the fragments will not be subjected to muscle strain as those in the lower jaw, and the retention of the fragments in normal position will not be so complicated. Fractures of the condyle with displacement offer less in the way of favorable prognosis than any other fracture of the lower jaw. In these injuries there usually will be produced a traumatism in the temporomandibular joint which may later result in ankylosis.

Gunshot fractures of the jaws, which are necessarily in most cases compound and comminuted, are in a much less degree amenable to treatment than most other fractures. Splints for supporting the fragments must necessarily be more complicated, and infection is always present. All of these factors must be taken into consideration by the operator in forming a judicious prognosis in the treatment of fractures of the jaws.

Time will not permit us to discuss at length the treatment of fractures of the jaws. The treatment of these fractures consists in the fulfilment of three principal indications:

1. Reduce the broken fragments.
2. Retain the parts in normal relation until consolidation has taken place.
3. Prevent or control inflammatory processes.

No hard and fast lines can be drawn relative to the treatment of fractures of the jaws, for each case will present an entirely different problem.

In the treatment, the operator should aim to establish normal forms and normal function. The different forces, such as muscular tension, the force of gravity, movements of the tongue, etc., which tend to displace the fragments, must be taken into consideration in determining the methods of treatment.

Individual ingenuity must ever play an important rôle in the treatment of fractures of the jaws. Equally successful results will be obtained by means and methods that are wholly different. In the construction of splints, the aim should be so to design them that all parts of the mouth may be kept clean, without which normal repair will not take place.

ABSTRACT OF DISCUSSION

DR. THOMAS L. GILMER, Chicago: In war, especially in trench warfare, injuries above the clavicle occur in the majority of cases; therefore, the jaws are involved often. It is almost impossible to have a fracture of the mandible that is not compound. And another complication follows that one—infection. It is frequently seen in cases of fracture in the mouth. It does not delay or prevent union, provided the infection is very slight. If the infection is extensive, make an external opening and drain to prevent destruction of tissues.

I have not seen a single case of traumatism of the temporomandibular joint as a result of fracture in civil practice. In the treatment of these cases the main object is to approximate the fragments. The fracture will unite more quickly if the fragments are not immobilized. There seems to be a greater osteogenetic influence where there is slight movement. I have employed an orthodontist extension arch, fastening it to the teeth on the upper jaw as well as to the lower, and then securing the upper bar to the lower bar by wires. The mouth can be opened every day. If you do not use immobilizing appliances, the patient must be instructed that under no circumstances is he allowed to use food which will require mastication.

DR. TRUMAN W. BROPHY, Chicago: Some years ago I saw in Europe a method of passing a bar on one side which had several wire bands adjusted to the teeth which ran on a slide fixed to the other jaw and also were fixed by bands to the teeth. These bars run in slides, thereby holding the long fragment where it belongs and thereby preserving the occlusion of the teeth. We must never forget that we can hold the teeth in occlusion on the side of the long fragment. In case a great deal of bone has been lost, cicatrization will preserve the lines of the face. When a portion of bone has been lost, there is no better treatment than by following the principles laid down by Dr. Gilmer. If only the third molar is left, let it hold the fragment in its proper position. The teeth on that side will be held in position and the intervening space will be filled in by new bone arising from the periosteum. If we can hold these in approximation very often much bone will form. By employing the method of wiring the teeth together we succeed in getting a good union, though part of it is cartilaginous, or rather fibrous. The proper occlusion of the teeth is preserved.

DR. ARTHUR D. BLACK, Chicago: It might be of interest to know that in the Plastic and Oral Surgery Course of the Army the men are instructed that in every place where there is a fracture they are to make an external incision into the open space between the ends of the bone.

DR. JOHN E. NYMAN, Chicago: In treating these fractures we need some means of mechanical fixation quite apart from that supplied by the teeth. In one case of multiple fracture we used platinum screws and wires because we thought that they could be sterilized more easily. The result was excellent.

DR. ARTHUR ZENTLER, New York: Dr. Depage and his associates use a new nomenclature for jaw fractures, terming them according to location, premolar, retromolar, retropremolar, and right or left. At LaPanne they have adopted a new method of treatment. For instance, in a case of retromolar fracture of the mandible, they attach a band to a tooth in the part which is not loose. Another band is attached to a tooth in the loose portion. To these bands a heavy expansion arch wire was previously soldered which extends and overlaps a similar wire soldered on the other band. The fracture is reduced with the patient anesthetized, and with soft solder the overlapping ends of the wires are united in the mouth.

DR. A. W. MCCULLOUGH, Pittsburgh: The first essential in reducing fractures is to secure apposition. Dr. Gilmer's wiring becomes rather tiresome to the patient after a few days and he wants it removed. I have used Angle's bands on the teeth, together with rubber bands attached to the upper and lower Angle's on teeth. Sometimes it works very nicely and gives the patient an easier condition of the muscles than we get when the jaws are wired together with immobilization. Regarding bands, we have used three or more bands, with bar attachments; bands of the Lukens design, that may be adjusted easily or changed, and which I prefer to cementing.

DR. FREDERICK B. MOOREHEAD, Chicago: Dr. Lyons' experimental work does not tally with the principles of bone regeneration as we understand them. It is understood that regeneration of bone must come from the osteoblasts, and that the periosteum per se has no capacity of bone regeneration. Dr. D. B. Phemister of Chicago has proved that bone transplants without periosteum are quite as vital in their function as those with the periosteum. One may take a section of bone from which the periosteum has been removed and then remove the subperiosteal layer by cutting it away and it will be found that that piece of bone has a certain capacity for regeneration, which must, of course, be found in the osteoblast. It must be true that in transplanting periosteum into muscles, as reported by Dr. Lyons, some of the osteoblasts were retained in the periosteum in its removal from the bone. The French method of treating fractures of the jaw is not to immobilize. Where there is no displacement and no tendency to displacement in muscle movement, a fracture of the jaw is more satisfactorily treated without immobilization than with it. Fixation and immobilization are necessary only where there is displacement, which cannot be controlled except by immobilization. It is doubtless true that the amount of movement occasioned by the muscle only acts as a stimulant and hastens repair.

DR. CHALMERS J. LYONS, Ann Arbor, Mich.: I think we are getting away from fixation of the jaw. We must retain the fragments when there is displacement. In mandibular fractures, where there is little or no displacement, we are getting away from the intradental ligation. The experience in fracture work of the men at the front is going to bring out many new things. Ordinarily, where there is infection of the mouth we can get along much better without fixation. In gunshot fractures I question whether intradental ligation has much of a place on account of infection. The point Dr. Gilmer brought up about external openings is a method we have resorted to in many cases. If an abscess forms you must drain. If pus forms around a fragment, repair is going to be retarded. It is much better to make an external opening at once. Relative to Dr. Gilmer's point of the osteoblasts lying just under the periosteum, we all recognize this fact, and it is to this layer that Hey-Groves has given the name of epiosteum. It is the osteogenetic portion of the periosteum. Without this layer of cells, the periosteum has not the property of producing new bone.

Improved Approach to Kidney.—Dr. G. Kolischer describes a new incision which he had devised for exposing the kidney (*Interstate Medical Journal*, 1918, **25**, 128) and which reduces the amount of destruction to the soft tissues of the abdominal wall. The patient lies on the operating table in such a way as to make his flank protrude. The skin incision is made half way between the twelfth rib and the crista ilii, and parallel to the rib, beginning at the anterior edge of the latissimus dorsi, and slanting downward the center of an imaginary line running from the umbilicus toward the spina superior ilii. The incision extends down through the fascia. Both lips of the wound are undermined for 2 or 3 inches. Retract the flaps so as to expose the external oblique. Separate the fibers of this muscle bluntly in the center, and also those of the internal oblique, including the transversalis. The fascia transversalis is split vertically with the knife and spread wide open with retractors so as to give a free exposure of the kidney. The wound is closed by reuniting the fasciae and approximating the skin edges. Tension sutures are also inserted.

THE MEDICAL PRACTITIONER AND MENTAL HYGIENE*

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To the average medical practitioner the subject of mental hygiene is more or less a closed book. At the most, its mention probably arouses little more than vague ideas concerning sets of mental tests or insanity. Few physicians appreciate the importance of mental training and its consequences, most being content to think that all that is necessary for healthy mentality is the possession of a healthy body. The fallacy of this view has been very strongly emphasized by the results of examinations and experience in the building up of our new Army.

The exemption boards have rejected something like one third of all drafted men, and one may take it for granted that none of the more obvious defects in construction have been overlooked in this process. And yet of the selected two thirds accepted for service by these boards, over 1 per cent. have been found unfit because of some mental or nervous deficiency. What the proportion of rejections by the exemption boards for such conditions is, I do not know, but, if added in, it is highly probable that not less than 2 or 3 per cent. of the male population are, on nervous grounds, unfit for Army service.

The demands of military service are, it is true, extremely exacting and the stresses and strains to be endured out of all proportion to those of civil life. But it must also be realized that in the Army men are subjected to intensive training, and that in consequence of this training some who would in all probability have failed in civil life will have a greater chance to succeed. Repeatedly, we hear such remarks in reference to enlistment as "It is just what he needs," "It will be the making of him," etc.

It may be urged that military training is essentially physical, that the principal benefits derived from it come from the setting-up exercises, outdoor life and regular habits. But is this all? Is there not even more training in the way of mental adjustments? The discipline and self control, the meeting with others on equal terms and all that this implies in the way of social adjustment, the morale and *esprit de corps* which figure so largely in our estimate of good soldiers, the demands for punctuality and strict performance of even distasteful tasks, and the steady persistence toward the accomplishment of a definite purpose all serve to form, as we say, the character of a man. It is possible that, especially in war time, there is a tendency toward limitation of individual responsibility, which may not be altogether desirable as an element of education.

Mental hygiene is a branch of medical science which deals with the establishment of habits of adjustment similar in kind to those sought in the Army, though designed more especially to fit the individual for civic duties rather than for fighting a human enemy. Just as the rules of bodily hygiene are intended to maintain bodily health, so mental hygiene attempts to lay down principles which will permit the individual to adapt himself, in a manner satisfactory to himself and to society, to social regulations. This means the control of personal longings and desires which are primeval and inherent in life itself.

Every one receives training in habits of adjustment of one kind or another. This begins in the home, whether that be a palace or the streets, and is also by far the most important part of the school curriculum. It is strange, in the face of this, that more attention has not been given to a study of the methods to be followed, the results desired and the harmful consequences of poor technic. This study is still in its infancy and there is urgent need for assistance from physicians everywhere.

As has been true in the early history of many other branches of medicine, most of what we have so far learned has been gained from the study of the end-results of faulty methods, pathologic behavior in all its varieties, including most of the insanities, the psychoneuroses, crime, delinquency and dependency. It is now essential for further progress that we begin to study the earlier stages when the habits are in process of formation, when the conditions for their establishment are open to investigation and when the prospects of modifying the habits are at a maximum. This implies reaching into the homes and schools.

Let us consider for a moment the factors involved in the consideration of mental adjustments. These may be divided under the two heads of (1) quantity; (2) quality. The former is structural; the latter functional. The one represents the tools with which the individual is endowed and must make his way, the wealth or poverty in nerve centers and associative connections provided by inheritance which we can, at present, do but little to modify. The principles of eugenics are far too little established to permit of any but the most empirical and superficial interference, attempts at which have been compared by Maudsley with those of trying to repair a broken watch by stirring its inside with a stick.

The best that we can do at the present time is to try to estimate the quantity of brain tissue available and then plan so to train it that the most efficient use possible may be made of it. It is this estimation of native ability which is attempted in the various forms of intelligence testing that have been and are being constantly evolved. Their application is a relatively simple procedure and does not require medical training for its performance. The situation with regard to its use is much the same as that of the Wassermann test in relation to diagnosis in somatic disease.

The quality, on the other hand, represents the use which is made of the tools available. To what extent this is inherent in the structure of the brain and in how far it is the result of training and education is not yet known. It is easy to allege and to collect statistics to prove the contention that a faulty mode of reaction, such, for instance, as crime, is inherited. But it must not be forgotten that the offspring of criminals not only inherit their structure, but that they also receive their early, most effective and important training in an environment of criminality. Similar reasoning applies also to hysteria and dementia praecox, in the causation of which heredity has been alleged as a prime factor.

Whatever be the true relation between these two causative factors, there can be no question but that training in habits is far more readily open to interference than is that of heredity. But, in order to accom-

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plish this in a rational manner it is essential that we answer certain questions which may be placed as follows:

1. What constitutes a healthy or satisfactory adjustment?
2. What are the indications of a liability to fail?
3. What measures must be taken to remedy or minimize these faulty tendencies?

The answers to these questions can at present be only roughed in for the reason that, in the main, we have studied only the grosser end-results and have yet to investigate the earlier phases and lesser degrees.

The answer to the first question depends on the following considerations: The struggle for life has led to the adoption by man of a gregarious or social mode of existence by which there is provided a greater strength through the mutual assistance and cooperation of many individuals. But each individual has also an innate and biologic urge for self preservation and reproduction, which must bring him into competition with his fellows within the social group. In order to avoid the disruption of society, which would result in the failure of man to maintain his supremacy in the world, it is obvious that individual desires must be subjected to certain limitations and restrictions.

These make up our laws for the regulation of conduct which have been gradually evolved with the progress of social union.

But with the growing strictness and extent of social regulation, there has been no diminution in the biologic desires of the individual, and we must regard a successful type of adjustment as one which secures individual satisfaction without offending social regulation. To illustrate roughly, a man is not allowed to seize something which especially attracts him, but must either secure its acquisition by fulfilling certain preliminary requirements, or must forego his desires and look for satisfaction in some other way.

The particular method which is adopted of looking for satisfaction "in some other way," represents exactly the problem with which the student of mental hygiene is concerned. This brings us to the second question.

It would take too long to attempt to go into the various faulty habits which have been recognized as types, and I must content myself with merely indicating that they include many of the so-called insanities, psychoneuroses, delinquencies, etc., referred to. As an example might be quoted the individual who develops a war neurosis as the result of finding himself in a situation rendered intolerable because of the conflict between his individual desires (including that to be out of all the horrible conditions of military duty in time of war) and the regulations imposed by the urgent demands of society which have placed him in that position. In developing the neurosis, he adopts a mode of adjustment which, painful as it often is, yet relieves him of his larger difficulties.

It is true that in this illustration I have chosen a case in which the conflict is intense and one which, in all probability, the person would never have had to face in times of peace. But the main value of the example lies in the fact that proper hygienic consideration can prevent the breakdown. This has been conclusively shown by the avoidance of neuroses in certain Army units through the watchful care of competent psychiatrists. It cannot be doubted, however, that some men will show poor adjustment under less strain than others, and that such persons will develop neuroses or psychoses even under the apparently simplest conditions of civil live.

It is with this last class that we have to deal more especially in our everyday social work, and it is for evidences of a tendency to react to situations of more or less difficulty in some manner which will place the individual in an extrasocial position that we must look in our efforts toward mental hygiene. These traits of behavior are being gradually more clearly defined in the gross and will become more easy of detection when we become possessed of more complete longitudinal studies of life histories.

The answer to the third question likewise depends on a clear formulation of the meaning and essence of the various types of pathologic behavior. At this point, it is also necessary in reaching conclusions to take into consideration the quantity feature, which has been discussed. The methods of treatment to be followed are similar in kind to those adopted in the Army today for the treatment of war neuroses. They concern education, the development of interests and habits, and have nothing to do with punishments arbitrarily inflicted.

Let us now turn to the question of the function of the medical practitioner in relation to this work. That it is a medical problem, even with regard to those disorders of behavior, such as crime and dependency, which are more generally considered as belonging to the layman, there can today be no question. That expert knowledge and direction of the work is also essential needs no demonstration. For this, unquestionably, as in all matters of public health, the state must provide the means. But the actual detailed work is enormous, as it must be carried even into the most remote communities and homes.

Numerous public and private agencies, dealing with some one or other of the phases of these problems, already exist, but they are often hampered by lack of authority and support, by overzealous or unwise technic, and they frequently overlap in their functions. To overcome these difficulties, state direction would do much, but there is also needed a closer cooperation on the part of the local physicians who must furnish the medical skill required for success.

For this purpose it is obviously necessary for the physician himself to be trained. Our medical colleges teach practically nothing along these lines, even though they devote considerable time to bodily hygiene. Courses in psychiatry are given, but as a rule they are extremely brief and contain little but a formal enumeration of what are described as the symptoms of certain more or less definite diseases. The human mind is not less important in the welfare of society than the body, and it is a far larger subject, embracing, indeed, within its field a consideration of the body and its diseases. Yet four or five times as much of the curriculum is devoted to neurology as to psychiatry.

If it does nothing else, this war will have performed an inestimable benefit to society by bringing prominently forward the importance of mental health to national efficiency. The demand for trained psychiatrists by the Army is far in excess of the supply, and yet the Army must be considered as one of the most sternly practical businesses this country has yet engaged in. The importance attached to mental hygiene in the Army is well shown by the fact that of all the medical specialties this is the only one which has been deemed so essential as to require a special representative on the divisional staff.

The object of this paper is, therefore, a demand for wider recognition in the medical profession of the subject of mental hygiene and the enrolment of medical practitioners for the furtherance of this work in the local community.

ABSTRACT OF DISCUSSION

Dr. Meyer Solomon, Chicago: This is a big problem. The recent work of many psychopathologists has been wholly an effort to emphasize the psychogenic aspect, making of the individual who has the mental upset more or less of a scapegoat, putting the blame on him; he is responsible for everything. As I see it, the problem is a far broader one than that. Mental health is interrelated with the general problem of education, religion, etc., which develop attributes of mind in the individual, and attributes of mind have a great deal to do with the way we react. Then, also, it is related intimately with the physiologic state of the organism. A man being overworked, underpaid, underfed, etc., is not going to have a stable organism, no matter how stable it was originally. For that reason we find that mental health is closely related to all the sociological and economic problems that confront us. Each individual is an individual problem. If a person has an innate, congenitally feeble nervous apparatus due to syphilis in the mother, contracted from the father, a preventable illness, who is to blame? Is not the remedy a system of education in the control of disease? Fundamentally it is a simple proposition. Instill into the mind of the child and the adult a strong, bold philosophy in life under which the individual can stand all sorts of disappointments, all sorts of trials and tribulations and still fight, without any grudge against anybody; an individual who will take an independent view of life, not running away from the struggle but facing things as they are, trying to reform, to construct, to change circumstances and environment to conform to the ideal whereby he or society shall benefit. Mental hygiene, from the so-called psychogenic point of view, is nothing more than an attitude in life. If the education a man has had in school and in church, or the training he has received at home, or the views thrust on him by the press or the books he has read, give him a wrong philosophy, all this is intimately related to the way he is going to react in life. Education is the big thing.

Dr. Joseph Byrne, New York: The question of education is one of the most important and fundamental that the medical profession has to deal with, but we are not "putting it over." We use a nomenclature that people do not understand. Why not get "next" to the people and make education real and not a myth? Education primarily is a superstructure erected on inherited tendencies, on instinctive capacity. Every human being, when young, is afraid of everything; an animal when young is afraid of everything. Try to teach a canary to take a seed off your finger: he is attracted, but repelled by fear. After a long time he is trained to take the seed. Education in the broadest sense is orientation, and orientation means nothing more than the elimination of fear in the child. An individual who has not been orientated up to 22 is afraid to mingle with his fellow men. A man may be well educated along social lines and he may be a wonder esthetically, but he may be no good ethically. In considering those people who have an unfortunate criminality, what kind of philosophy have we as medical men? Rotten materialism ofttimes, narrow minded in not taking into consideration the whole aspect of education in a health sense. Here is a poor fellow who does not understand the conflict between his fundamental sex instincts and society at large. What is the proper education for him? Explain to him that his instinct must be held in check to a certain extent.

Dr. Hugh T. Patrick, Chicago: I have just been having four weeks' experience in examining recruits for the Army. One man seemed to be very nervous, apprehensive and unstable, although he had been living the life of a fairly useful citizen. He had worked steadily, was devoted to his mother, made fair wages, and had no bad habits. He did not save any money. On the whole, he was a fairly useful, peaceable citizen, useful to society and quite bearable for himself. But when he got to the camp the emotions incident to leaving his home, to changing his environment, the anticipation of what might be ahead of him, the fear of the unknown, made him very nervous, and we thought that probably he was not fit to go. Largely for my own information and education in this matter, I had this man put to regular army work for ten days. At the end of five days he was returned to our ward because he was nervous and could not do the work. The man had become worse; he had become so much worse that we rejected him. But he did not get away from the camp because his people had to be notified and the formalities had to be gone through. Two days later his brother arrived to take him home, but the boy was not in camp. He had slipped away and committed suicide by throwing himself under a train. In other words, he had to get away from an intolerable situation. That was a case in which we tried to operate mental hygiene, but were a little too slow in motion to prevent this catastrophe. Another boy showed that he was very unstable. He was hypersensitive physically and emotionally, and we definitely rejected him on first examination. He was not a very useful member of society, although he was self-sustaining. He did not work steadily; he was more or less hypochondriacal; little things upset him. But he made a living and was on the whole a tolerable citizen. Again the delays in getting him out of the camp were sufficiently prolonged so that after four or five days I found him in the hospital absolutely disabled, shaking like a leaf. How long that disability may last is a matter of guess.

These are two examples which are illustrative of the point that we should get these imperfect organizations early enough to prevent the catastrophe that will be precipitated by a change of surroundings which will be intolerable to the individual. This would seem to be peculiarly applicable to the present time when many of us are of necessity examining drafted men, whether on draft boards or advisory boards or in camp. I would like to urge that we take the chance rather of rejecting too many of these men than of allowing too many of them to get into the Army.

Dr. William O. Krohn, Chicago: If we can impress on the general practitioner's mind the fact that the child at birth possesses every brain cell it ever will have, and that if these cells are brought into use and activity they will live, but that they will die from inactivity and disuse, then the general practitioner, cooperating with school and home, will through educational forces see to it that all these brain cells are brought into use and activity. Erratic development comes from not recognizing the fact that the child never has a single brain cell added after birth.

Dr. Edward E. Mayer, Pittsburgh: In connection with a previous paper it was stated that psychiatrists do not remember and utilize their anatomy and physiology. In conditions involving mental conflicts I try to bring about in the attitude I take toward any patient the personal equation. I try to elucidate the psychogenic factors, and I try to think of mental hygiene as much as possible. But, at the same time, I want to keep on studying and to remember what we know of the architecture of the brain, which is so often forgotten. The remark that impressed me was that at birth the child has all the brain cells it will ever have. This is not true. Psychiatrists are starting to talk of biologic education, etc., but they go all around the bush in their discussions and we never hear a word said about the exact technic of brain architecture. Of course, we cannot talk about it in terms of personal equations, and yet back of the reactions in individuals, as Dr. Singer hinted in his paper, are these differences anatomically and physiologically in the individual, and I do not know why psychiatrists always forget that.

Dr. C. R. Ball, St. Paul: It is rather interesting to note that without any correlation or prearrangement these subjects have practically dovetailed into one another, and the subject of mental hygiene has been the one that has been uppermost in the minds of the essayists and also of the hearers. The wonder is why this subject, which is of such material importance, should be so long in making an impression. In our social life and civilization mental hygiene is

one of the greatest and best and most practical of subjects, and it holds more for the psychiatrists than anything else within their reach. I have wondered why the school teacher never takes into consideration what the inheritance of a certain child is, what its social environment is, what its particular adaptabilities and talents and characteristics are. They crowd down uniformly the same sort of discipline and the same sort of education and the same standard of grading for all children. There can be nothing less intelligent. We do not do that in the raising of live stock. Another thing that we are just beginning to recognize and apply definitely to this subject is that all these little defects which, so far as the efficiency of the individual is concerned, are very important, have seemed to create a tendency even among ourselves to look on them as something that demanded exceptional ability. We have the tendency still, when we go to a show and see a man who pretends to be drunk to act as if there was something entertaining about seeing a man drunk. We are proud of our lack of control. But we have come to look on these deviations and derivations and mental defects or deficiencies as so many black marks under mental insufficiency, and that is where they belong. How we are going to stop crime and cure criminals is going to have a great deal to do with the wonderful change in our conception of these people and our methods of handling them.

DR. H. DOUGLAS SINGER, Kankakee, Ill.: What I was trying to do in presenting this subject was not to arouse a philosophical discussion, but to stimulate an interest in it from a practical standpoint, for that is what we are working for at this stage. I believe the time is here when mental hygiene will have to be taken in hand practically. The various states are stirring up quite a little interest in it, although the medical schools are lagging behind. What are we trying to do? Educate the people. But we must consider it from the medicopsychiatric point of view. There is a great deal of work yet to be done.

BLOOD PRESSURE STUDIES OF FIVE HUNDRED MEN

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The studies for this report were made on men who applied for examination for the American Army Aviation Service. It may readily be seen that a long period of study could not be given to each applicant without causing unwarranted delay to the applicant and also to the other examiners. A Tycos instrument, daily tested with a mercurial sphygmomanometer, was used for all blood pressure estimations. All readings were made by one examiner in order to reduce the personal factor to as small an error as possible.

Readings were made with applicants in (1) the recumbent position; (2) standing, before exercise, and (3) standing, after measured exercise. The readings, in the first position, were made after the nervous excitement had become controlled as much as possible. This factor was commonly very prominent and often difficult to control, sometimes requiring the subject to return for a later reading. For the exercise test, a flight of twenty-four steps was used, each step having a 6-inch rise. Since the average weight was 142.6 pounds, the work performed averaged about 1,600 foot-pounds in five seconds. The area of cardiac dulness was estimated by percussion. The systolic and diastolic pressures were obtained by auscultation, and the diastolic pressure was read at the point of change from the third to the fourth phase.[1] After the exercise test, the time required for the blood pressure to return to the previous standing point was noted in 200 of the men examined and recorded as recovery time.

The range and average of the readings in the recumbent position for the 400 cases that stood all tests as good normals are given in Table 1.

I recognize the danger and, more often, the waste of time in the use of mathematical formulas for the interpretation of clinical findings. But a few such formulas have been so frequently used in blood pressure studies that I have arranged their values in Table 2 as derived from the first table.

TABLE 1.—READINGS FOR FOUR HUNDRED CASES IN RECUMBENT POSITION

	Age	P. R.	S. P.	D. P.	P. P.	Phase Lengths			
						1	2	3	4
Range.....	19 - 39	78 - 94	110 - 132	80 - 88	29:44	8 - 18	20 - 26	5 - 10	4 - 6
Average...	24.2	85.4	127.7	84.1	42.2	12.1	24.5	6.2	5.1

Tiegerstadt, using Strassburger's blood pressure quotient, measured the cardiac efficiency by dividing the velocity of the arterial flow by the work of the heart, and adopted the formula $\frac{PP \times PR}{SP \times PR}$, with an estimated normal value of from 30 to 35 per cent.[2] Stone,[3] recognizing the value of the diastolic pressure in estimating the heart load, adopted the formula $\frac{PP}{DP}$, with a normal value of 50 per cent. Goodman and Howell,[4] in their studies of the auscultatory pressure phases, designated the second and third phases as measures of cardiac strength, and the first and fourth as the phases of cardiac weakness. From these studies they concluded that a cardiac strength factor greater than a cardiac weakness factor denotes a competent myocardium, especially if the second phase length equals more than 40 per cent. of the entire pulse pressure length. They determined the normal value of C. S.: C. W. as 55.4: 44.4.

TABLE 2.—PERCENTAGE VALUES DERIVED FROM TABLE 1

	$\frac{P.P.}{S.P.}$ %	$\frac{P.P.}{D.P.}$ %	C. S. %	Second Phase P. P. %	Crampton %
Range.....	29.8 - 36.9	48.9 - 56.7	54.1 - 56.6	46.2 - 62.6	75 - 100
Average.....	33	50.2	55.8	57.4	86.9

Crampton[5] has worked out an ingenious table for measuring the percentage of vasomotor efficiency through the differences in the pulse rates and systolic pressures in the recumbent and standing positions. This table is based on the fact that the vasomotor tone is increased, normally, on changing from the recumbent to the upright position. Consequently the systolic pressure is increased and the pulse rate is either unchanged or slightly increased. In conditions of lowered vasomotor tone, the systolic pressure remains

1. Warfield, L. M.: Studies in Auscultatory Blood Pressure Phenomena, Arch. Int. Med., September, 1912, p. 258.

2. Muller: Med. Klin., 1908, **1**, 47.
3. Stone, W. J.: The Clinical Significance of High and Low Pulse Pressures with Special Reference to Cardiac Load and Overload, THE JOURNAL A. M. A., Oct. 4, 1913, p. 1256.
4. Goodman and Howell: Am. Jour. Med. Sc., 1911, **142**, 334.
5. Crampton, C. W.: New York Med. Jour., 1915, **98**, No. 19.

the same or is decreased on the change of position, and the pulse rate shows a definite increase.

The results for each person come well within the normal value given for each formula. The percentage ratio of Goodman and Howell's cardiac strength factor was persistently high and showed only the narrow percentage range of 2.5 in the 400 men examined. The ratio of the second phase to the value of the first, second and third phases, or the blood pressure length, shows a wider range and a high average. In several men, still in active training, a very prominent second phase was noticed.[6] The length of this phase seemed to be at the expense of the first and third, since the fourth phase was always of average length. Tonal arrhythmia, as described by Goodman and Howell, was never noticed in this group. In forty cases, or 10 per cent. of the total, a blurring of one or more of the phase tones was noticed. This was never so marked as to make the phase limit very difficult to recognize. Where this blurring was limited, it was usually found between the first and second phases, and in only two of the forty cases was it found limited to the third and fourth phases. These were cases showing intense excitement, difficult to overcome, in which readings taken two days later showed clear, normal, phase tones.

TABLE 3.—READINGS AFTER EXERCISE

	P. R.	S. P.	D. P.	P. P.	Pressure Phases				Recov. Time Min.
					1	2	3	4	
Range	86 - 138	128 - 158	84 - 96	44 - 68	8 - 18	24 - 49	6 - 16	6 - 9	3.1 - 7.6
Average	112	145.4	90.6	54.1	13	33.5	11	7	4.4

Table 3 gives the blood pressure findings after measured exercise, and a comparison with Table 1 shows the characteristic increase of both systolic and diastolic pressures after exercise, with the more marked increase in the former, causing an increase of pulse pressure.[7] In the pressure phases, the most marked increase is in the second phase.[8] This was true in each of the 400 cases, and it points with considerable emphasis to the importance of this phase in blood pressure interpretations. The least increase in the second phase, after 1,500 foot-pounds of work, was 4 mm. In this series, the third pressure phase showed but little more increase after exercise than did the first and fourth phases.

In no case was the heart area found to be increased after the exercise, so far as could be determined by percussion and by the position of the apex impulse. In 31 per cent. of the cases, no change could be determined. In the remaining cases, there seemed to be a definite decrease in area. One hundred of the patients that showed a decreased area of dulness, after an average of 1,600 foot-pounds of stair-climbing in five seconds, were later given double this amount of exercise with a diminished cardiac dulness again in evidence.

It is to be regretted that the Barringer test[9] could not have been carried out completely in these studies, and records made of the blood pressure findings. In 200 cases, blood pressure readings were made immediately at the end of the exercise test and continued until the pressure returned to normal. In these, the apex of the systolic rise was reached in from 30 to 60 seconds after 1,600 foot-pounds of work. In the same group of 200 men, after double this amount of work, the highest point of the systolic rise was reached in 49.7 seconds; and the systolic pressure returned to its normal in from 3.1 to 7.6 minutes after the exercise, with an average recovery time of 4.4 minutes. These results agree with the general conclusions of Graupner,[10] Barringer, Rapport,[11] and other investigators, and show the normal increase, after work, in the systolic pressure, associated with lesser rise in the diastolic, with the resulting increase in pulse pressure. Associated with this systolic rise is a delayed return to normal after heavier work.

In the 400 normals, the pulse rate after exercise showed an average increase of 26.6 beats per minute, but returned to the quiet rate in from 2 to 5.5 minutes, with an average of 2.8 minutes. Definite tonal arrhythmia was not noticed in any of this group of normals.

In the following 100 cases which showed some variation from a strict normal, the findings were very complex, and diagnoses were usually impossible on blood pressure readings alone. All these men had had a more or less thorough routine physical examination that was recorded with their application papers. Consequently it is not surprising that very few cases showed some form of heart murmur. Five cases in all were detected, and these I have grouped for comparative study. Cardiac dulness was increased by the stair test in all five cases, and the breathing was objectively labored. Tonal arrhythmia was present in three cases—Cases 27, 84, 231. Table 4 gives the pressure readings in each of these cases.

The ratio of the second phase to the pulse pressure, after exercise, is found here to be low in each case, having a percentage variation of 28 to 46.1 compared with the values, before exercise, of 45.6 to 59.5. The C. S.: C. W. values are also slightly reduced after exercise when compared with their previous percentages, but to a less degree. These computations give us some basis for the diagnosis of myocardial weakness, but the same decision can be much more easily reached in noticing the change, in the cardiac area with exercise, in the dyspnea, and especially in the time required in each case for the pulse to drop to its previous rate. In these five cases the pulse rate recovery time was 10, 12, 15, 14 and 13 minutes, respectively. Case 27 at rest showed an indistinct mitral roughening that developed into a systolic murmur transmitted into the axilla after exercise. Case 34 showed the same finding at rest, and, after exercise, the mitral systolic

TABLE 4.—PRESSURE READINGS IN FIVE CASES OF HEART MURMUR

No.	Before Exercise							After Exercise						
	S. P.	D. P.	P. P.	Phases				S. P.	D. P.	P. P.	Phases			
				1	2	3	4				1	2	3	4
27	126	84	42	12	25	5	6	142	90	52	18	24	10	7
34	126	84	42	10	22	10	7	132	88	44	18	22	14	9
84	128	80	48	18	24	6	7	140	100	40	20	14	6	8
220	148	86	62	21	34	7	10	182	96	86	39	37	10	14
231	138	70	68	28	31	9	11	146	78	68	26	27	10	14

6. Swan: Internat. Clin., **4**, Series 24.
7. Norris: Internat. Clin., **1**, Series 17 (biblography).
8. Fisher: Deutsch. Med. Wchnschr., 1908, **34**, 1141.
9. Barringer, T. B.: The Circulatory Reaction to Graduate Work as a Test of the Heart's Functional Capacity, Arch. Int. Med., March, 1916, p. 363.
10. Graupner: Ztschr. f. exper. Path. u. Therap., 1906, **3**, 113.
11. Rapport, D. L.: Systolic Blood Pressure Following Exercise, Arch. Int. Med., June, 1917, p. 981.

murmur was transmitted through the left axilla and could be easily heard at the angle of the scapula. In both these cases there was definite accentuation of the pulmonic second sound. Case 84 showed no abnormal sounds at rest, but developed an aortic roughening and a mitral systolic murmur after exercise. Cases 220 and 231 showed an aortic roughening which was more marked after exercise. Cases 84, 220 and 231 were all cases with hypertrophied tonsils and with slight subjective joint signs of absorption.

In five cases the radials were definitely palpable. All of these showed abnormal respiratory embarrassment with exercise and an increased recovery time of pulse rate. A comparison of the findings in these is given in Table 5.

TABLE 5.—COMPARISON OF FINDINGS IN FIVE CASES IN WHICH THE RADIALS WERE PALPABLE

No.	Before Exercise							After Exercise						
	S. P.	D. P.	P. P.	Phases				S. P.	D. P.	P. P.	Phases			
				1	2	3	4				1	2	3	4
8	150	102	48	14	23	11	7	172	104	68	18	36	14	10
34	126	84	42	10	22	10	7	132	88	44	18	22	14	9
44	132	80	52	12	10	30	6	142	92	50	6	20	24	6
58	142	96	46	12	27	7	6	168	104	64	26	28	10	8
291	144	98	46	14	24	6	10	172	110	62	20	32	10	14

P. R. recovery time, 11, 13, 7, 14, 12 minutes, respectively.

Pressure findings in this group also show wide variations. The C. S. factor was increased by exercise in all but one case (Case 58). But the ratio value of the second phase was increased only in Cases 8 and 44. The palpable radials constitute a finding probably of little importance in these men. They all show a limited physical efficiency. Patients 8 and 44 had held office positions for several years, with little physical exercise, and impressed one as being persons to whom systematic exercise would be of real therapeutic value. With the exception of Case 34, the men of this group are now all in other branches of active service and after three months of training are considered as physically fit. I have examined three of these men (8, 44 and 58) after they had had two months of training and they showed a good normal response to exercise in every way.

Eleven applicants showed abnormally high systolic pressure with a high pulse pressure. Rest and quiet for half an hour failed to correct these high values. One of these men had smoked twelve cigarettes in the morning before the examination. Six men had made an all-night automobile trip in order to be able to keep their appointment at the examining station. Four still showed signs of the previous night's dissipations. The pulse recovery time in these ranged from 4.5 to 6.5 minutes. After a twenty-four hour period of rest, these men all showed normal pressure values with normal responses to exercise.

One man (242) showed a systolic reading of 138 mm., with a slightly increased pulse pressure. He had a low second phase ratio value after exercise and a Crampton reading of 52 per cent. The pulse recovery time was 5.5 minutes. Two days later he showed the exanthem of measles. After he had recovered, the pressure findings were normal. Recovery time was three minutes to 1,600 foot-pounds of work, and the Crampton reading was 92 per cent.

Eight men showed acute infections. Of these, three had acute tonsillitis, four had acute bronchitis and one acute laryngitis. Systolic pressure values ranged from 120 to 128 mm. As the ages ranged from 28 to 36 years, these systolic readings are but little lowered. Pulse pressure readings ranged from 42 to 46—only a little above normal ratios. Second phase ratios to pulse pressure were within normal limits during rest, but were low after exercise. Pulse recovery was delayed in each case, ranging from five to eight minutes after a rapid ascent of twenty-four steps. These men all returned for later examinations and showed normal findings.

Two cases showed hypotension (Cases 239 and 271). The systolic pressures were 98 and 101, with pulse pressures of 30 to 35 mm., respectively. No abnormal heart findings were detected, aside from soft and distant sounds. Response to exercise was very poor in both cases. Case 239 showed a second phase ratio of 34 per cent. before exercise and 30 per cent. after 500 foot-pounds of work, also a pulse recovery time of ten minutes, markedly labored breathing with slight tonal arrhythmia in the first, second and third phases, and a Crampton value of 22 per cent. Hands and feet became markedly cyanosed on standing, but no other objective signs were noticed during the period of rest. This applicant gave a history of frequent fainting attacks after exercise and excitement. Case 271 had a second phase ratio of 38 per cent. after exercise and of 41 per cent. before. The pulse recovery time was 7.5 minutes. Labored breathing was observed after 600 foot-pounds of work, with a Crampton estimation of 42 per cent.

Thirty-eight cases showed some degree of tonal arrhythmia. In seven, this persisted through all the pressure phases. In nineteen, it was found through the first and second phases, and in twelve in the first phase only. Blood pressure findings during the periods of rest were normal in all of the thirty-eight. In all those showing arrhythmia throughout the phases, the response to 1,600 foot-pounds of work was poor. The pulse pressure was increased none, or very little, after the exercise. The C. S. value and the second phase ratio were reduced. One pressure record (Table 6) will illustrate the findings in all the seven cases, as there was marked similarity.

TABLE 6.—PRESSURE RECORD IN CASE OF PERSISTENT TONAL ARRHYTHMIA

Before Exercise							After Exercise						
S. P.	D. P.	P. P.	Phases				S. P.	D. P.	P. P.	Phases			
			1	2	3	4				1	2	3	4
136	91	45	10	28	7	6	164	116	48	19	17	12	16

In these seven cases, the Crampton percentage ranged from 52 to 68 per cent. Breathing was labored after the routine amount of exercise in each case, and the pulse recovery time ranged from 4 to 6.5 minutes. Two of the men mentioned slight distress over the mitral area after exercising. Four gave a history of dyspnea and some degree of precordial pain on forced exercise, which had obliged them to give up all athletics in school, except light gymnasium work. When the exercise was reduced to a figure of less than 600 foot-pounds, these men gave normal responses.

Blurring of the phases was present in all seven cases. The rest of the thirty-eight cases arrange

themselves fairly definitely, in groups of varying physical efficiency paralleling the extent of the arrhythmia. There was not sufficient time to test out each of these cases thoroughly with measured graduated exercises, but such tests could easily be made and used in determining the character of service men of this type are best able to give efficiently.

The remaining thirty applicants gave a blood pressure picture of nervous excitement, with increased systolic findings and a high pulse pressure. These cases showed normal physical findings, except for a slightly increased fulness of the pulse and a slightly lowered Crampton percentage of vasomotor efficiency. The systolic and diastolic pressures ranged from 140 to 158 and from 90 to 102, at rest, and gave an increase of pulse pressure, after exercise, of from 6 to 10 mm., slightly less than the normals. No arrhythmia was present and no demonstrable increase in cardiac dulness. There was no blurring of the phase tones. Dyspnea was not marked in any case, and there were no distressing subjective symptoms. The ages of the thirty men ranged from 21 to 32 years. The blood pressure findings were similar to those in the cases of nervous excitement, but the condition could not be controlled by recumbent rest and quiet of more than one hour's duration at the examining station. Twenty-three of the men gave normal pressure findings within one week of daily observations, with general directions regarding sleep and avoidance of tobacco, coffee and other stimulants. Seven men were observed for two weeks, with very little change in the pressure findings and vasomotor percentages. In all these cases, the pulse recovery time was normal and the men responded well to the test of climbing fifty steps at good speed. The seven men have since entered the officers' training camps, and all have stood the work well.

Among the 400 cases reported as normals, twenty-three showed high systolic and pulse pressures on the first reading. The systolic pressure in these cases frequently registered as high as 165 mm., and in three cases it was recorded as high as 175 mm. The diastolic pressure registered from 87 to 92. Consequently, in several instances, the pulse pressure was almost equal to the diastolic. Physical findings were negative and after a short period of quiet, with occasionally some reassurance, the pressure findings dropped to normal. In one college athlete, aged 22, the systolic pressure dropped from 174 to 128 mm. in seventeen minutes. The Crampton estimate in these cases ranged from 75 to 80 per cent. after the systolic pressure had been reduced. Such cases emphasize the error of basing any opinion on single blood pressure readings, especially if unassisted by the exercise test.

Blood pressure findings alone are often of little value; especially is this true if we are trying to determine a man's physical fitness. The added information given through some form of measured exercise is of definite importance. The increase in the pulse rate with exercise is of no importance. In the 500 cases here reported, there was no marked difference noted between the increased rate of the normals and that of the unfit.[12]

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12. In addition to the references already given, the following will be found of interest:
Morris and Lane: Arch. Diagnosis, 1917, **10**, 233.
Lewis, T.: Lancet, London, 1918, **1**, 181.

RETROPHARYNGEAL ABSCESS*

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The subject of retropharyngeal abscess is so vaguely understood by many general practitioners, and the results of an error in diagnosis may be so disastrous, that the report of a case should be of value.

The case is reported not on account of original material, but because of the lesson that it teaches. We are too prone to adopt the habit of looking for the usual condition in a part affected, and to overlook the unusual condition when it appears. The careless physician commits the sin of assuming the usual condition. In this case the baby's life could have been saved in hardly more time than a physician would consume in putting on his overcoat. One of two conclusions must be drawn, either a physician was not called or, having been called, was negligent. A digital examination would have given him the diagnosis.

No history of the disease can be given. The body of a negro baby, aged 2 years, being unclaimed, became the property of the State anatomical board and was delivered to the Daniel Baugh Institute of Anatomy of the Jefferson Medical College of Philadelphia for scientific purposes. The preservation being poor, the body was valueless for routine study. A midsagittal section was fortunately made by Dr. Schaeffer after first hardening the body in solution of formaldehyd. This disclosed the condition that is well shown in the accompanying illustration. An abscess measuring 3 cm. in length and width was found in the retropharyngeal space. It extended forward 2 cm. to the uvula and epiglottis, completely obstructing the pharynx and larynx. The abscess cavity was much shrunken by the action of the formaldehyd and in the living state was, doubtless, much larger. An examination of the body gave no definite clue as to the cause of the abscess. A prominent pharyngeal tonsil was present.

The development and course of retropharyngeal abscess is better understood if one keeps in view the the different layers of tissue that intervene between the pharynx and the cervical vertebrae.

Dorsal to the mucous membrane of the pharynx is the pharyngeal aponeurosis, a loosely attached fascia permitting of free movement and free swelling. This fascia is followed by the constrictor muscles, which are in turn covered by the thin buccopharyngeal fascia. This fascia is but loosely attached by areolar tissue to the strong prevertebral fascia which follows. The loose areolar tissue space—the retropharyngeal space—permits of free expansion. The strong prevertebral fascia covers the prevertebral muscles which overlie the cervical vertebrae. It is evident, when pus forms dorsal to the prevertebral fascia and is confined there, that extension must be limited, whereas, if present ventral to the fascia, in the loose retropharyngeal fascial space, the freest extension is possible.

The source of infection leading to abscesses posterior to the pharynx are usually classified under four headings:

1. Those due to caries of the upper cervical vertebrae, usually of tuberculous origin. Such an abscess, being dorsal to the prevertebral fascia, is very

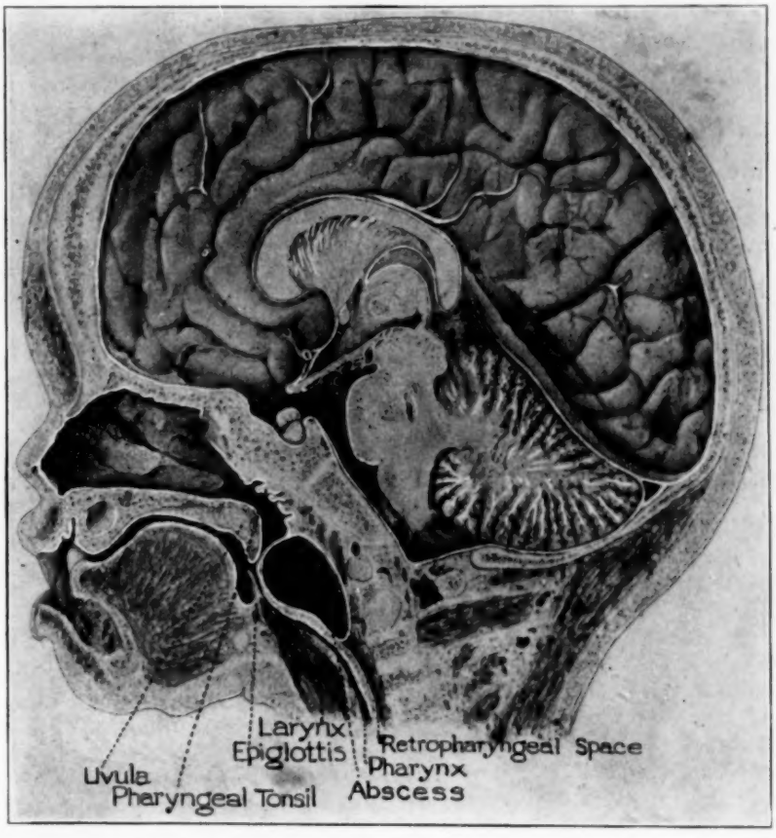
* From the Daniel Baugh Institute of Anatomy, Jefferson Medical College.

apt to burrow laterally and appear as a tumor in the neck, dorsal to the sternocleidomastoid muscle where it should be opened under the strictest asepsis to prevent a mixed infection. If unopened, it may follow the brachial plexus into the axilla. Regardless of the prevertebral fascia, it may, however, burrow forward in the midline of the pharynx.

2. Those due to an otitis media. The pus probably burrows downward in the upper part of the eustachian tube along the tensor tympani muscle to terminate behind the prevertebral fascia. It tends to point in the same direction as infection from cervical vertebral caries.

3. Those due to an extension inward of a carotid abscess.

4. Those due to infection of the lymph nodes of the retropharyngeal space. These nodes are one or two in number on either side of the midline opposite the lateral masses of the atlas. They receive lymphatics from the nasopharynx, eustachian tubes, nasal fossae and accessory sinuses.



Retropharyngeal abscess.

The abscess accordingly lies in front of the prevertebral fascia and usually, as in the case reported, points into the pharynx. If not opened by the surgeon, it causes dyspnea, dysphagia and dysphonia and probably death from suffocation, or the abscess may rupture and the pus be swallowed or drawn into the larynx. In the latter case death from suffocation or septic pneumonia may result. As the retropharyngeal space is composed of loose connective tissue extending downward behind the esophagus to the posterior mediastinum, failure of evacuation permits the abscess to follow a course of slight resistance downward into the thorax. Abscesses in the pharynx should be opened in the midline, while the baby's head is held sufficiently low to allow the contents to flow out of the mouth.

Food Waste in Meat Production.—It may be roughly estimated that about 24 per cent. of the energy of grain is recovered for human consumption in pork, about 18 per cent. in milk and only about 3.5 per cent. in beef and mutton. In other words, the farmer who feeds bread grains to his stock is burning up 75 to 97 per cent. of them in order to produce for us a small residue of roast pig, and so is diminishing the total stock of human food.—Armsby, quoted by Lusk, Food in War Time.

RATIONAL PREOPERATIVE TREATMENT WITH SPECIAL REFERENCE TO PURGATION

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The routine preoperative treatment naturally shows wide variation in the different hospitals. The type of diet, the amount and kind of fluids given, the preparation of the operative field, and the hypodermic medication are subjects representing the greatest divergence of opinion. On only one point are nearly all surgeons in accord, namely, the necessity for the administration of some kind of cathartic the night before a surgical procedure. Viewed collectively, it seems to matter little what type of intestinal evacuant is prescribed, whether it be a mild laxative, a more efficient cathartic, or a purgative.

This practice is apparently the survival of an old principle, taught when the main treatment for all diseases was purgation, frequently repeated. It was held that the intestinal contents were toxic, and in fact it was even asserted that the disease or its products could thus be entirely eliminated. At present, purgatives are seldom given by internists. The mild cathartics and enemas have replaced the more drastic drugs, the aim being to obtain regular bowel movements of normal consistency.

Many surgeons in their postoperative treatment have likewise substituted enemas or mild laxatives for the more violent cathartics. The majority of surgeons, however, do not follow the same principle in their preoperative medication. It has seemed easier to change the postoperative treatment, which of necessity varies much, than to change the routine preoperative treatment, which remains the same for nearly all cases.

The object of this paper is to point out the advantages to be gained by changing the ordinary preoperative treatment in favor of the use of simple enemas. Like nearly all surgical procedures, no absolutely hard and fast rules should be followed. There are undoubtedly cases in which the administration of a mild cathartic before an operation may be of advantage; on the other hand, however, I consider such cases the exception instead of the rule.

Every surgeon has noticed that the emergency patient who comes to the hospital in need of immediate operation has as good a postoperative recovery and as uneventful a convalescence as the patient who is, so-called, properly prepared. It makes little difference whether it is a case of acute appendicitis or a crushed limb requiring immediate amputation. The surgeon proceeds with the operation without thought that the patient undoubtedly has fecal material in the small intestine. Again, in such cases as strangulated hernia, intestinal perforations from traumatic or other causes, and acute intestinal obstructions, in which no surgeon would think of giving more than an enema, the patient's progress is as satisfactory after the operation as that of the patient who has had a similar operation after the administration of a preliminary cathartic. It is evident, therefore, if we reason from the experience of emergency surgery, that preoperative catharsis is not necessary and can be eliminated without any appreciable change in the well-being of the patient.

EFFECTS OF PREOPERATIVE EVACUATION

The advantages claimed for preoperative evacuation of the small and the large bowel by drug action are few. The elimination of intestinal products which might lead to putrefaction, the sterilization of the intestine by calomel, and the elimination of disease products are the usual claims advanced. Many surgeons, when asked why they order cathartics, simply reply that the patient is thereby put in a better position to withstand the operation. But does catharsis really do this? The elimination of intestinal products present twenty-four hours or less before operation does not prevent putrefaction, since waste products of the body are constantly passing into the intestine. Further residue after digestion of ordinary food is not prone to putrefaction, and this is the only material that can be definitely eliminated. The whole question of the absorption of toxic bodies from the lower part of the small inetstine and the large bowel is still unsettled. It was shown by Frazier and Peet,[1] however, that, in the dog at least, absorption of toxic products of intestinal putrefaction from a partially obstructed colon could not be demonstrated.

The attempt at sterilization by calomel and other drugs has been proved useless. Great numbers of organisms are, of course, carried out, but this process is not really beneficial since it tends to change the bacterial flora, usually in the direction of multiplying the fermentative organisms.

The elimination of disease products is, without question, a valuable and necessary procedure. It is, however, only in the exceptional case requiring operation that a disease exists whose products are eliminated by the intestine in sufficient quantity to warrant any hopes of real improvement by this means.

DISADVANTAGES OF CATHARSIS

The disadvantages that follow preoperative catharsis are numerous. The most important are psychic and physical weakness, the loss of sleep, the loss of body and intestinal fluids, the hypotonicity of the intestinal wall, and the change in the intestinal flora.

Practically every one has noted the depression, both physical and psychic, which many patients show after catharsis. This certainly is not conducive to rapid convalescence or even to an excellent operative condition. Many patients complain of the loss of sleep the night before their operations, caused by the discomfort in the abdomen or the frequent necessity to use the bed pan. Even the exertion necessitated by frequent bowel movements is a source of fatigue.

The loss of body and intestinal fluids by catharsis is a serious drain on the system, and occurs, no matter what type of drug is used. The patient is thirsty long before the operation because his body is in need of the fluids carried out by the purge. The widespread use of the coffee and whisky enema, the "Murphy drip," the subcutaneous saline infusion, and the intravenous administration of fluids are all indications of how thorough is the understanding that the body needs fluids in abundance immediately after an operation. Yet, by the catharsis, we carry away more fluid than will be absorbed by the rectum and colon in several hours. The lower bowel is also more sensitive to irritation after purgation and therefore is not so tolerant of the rectal tube and the saline or tap water. Therefore the patient prepared in the orthodox manner, who is in need of fluids because of loss of blood or other causes, is at a double disadvantage, first, from the loss of fluids before operation, and second, from the inability of his colon to tolerate the easiest and safest methods of their administration. The postoperative thirst after such preparation is naturally greater.

The natural peristalsis of the small intestine is stimulated by the presence of semisolid material within its lumen. The loss of this stimulation, the irritation of the drug, the depletion of fluids and secretions of the intestine, and the increased peristalsis lead to hypotonicity of the intestinal wall. This results in gas distention and postoperative ileus, and is undoubtedly a contributing factor to the more or less prolonged nausea and vomiting so common after operations. The change in the bacterial flora resulting in a preponderance of the fermentative organisms works hand in hand with the hypotonicity in producing the abdominal distress, the severe gas pains, and even interference with respiration and heart action by means of abdominal distention.

ADVANTAGES OF SIMPLE ENEMAS

The clinical evidence in favor of the proposed change in preoperative treatment is quite conclusive. For the past six years there has been a careful comparison of patients receiving catharsis before operation and those receiving only simple enemas. The results have been decidedly in favor of simple enemas as a means of emptying the bowel. Postoperative thirst, nausea and vomiting, abdominal distress and gas pains occur much less frequently. The patients are in better mental and physical condition to withstand the operation and are in far better condition afterward.

Recently additional evidence supporting the theoretical and clinical findings in relation to catharsis has been brought out by Alvarez and Taylor.[2] Their experiments demonstrate that after catharsis the bowel is filled with gas and fluid, the mesenteric circulation is disturbed, the rhythm of the peristalsis is upset, portions of the intestine beat irregularly and poorly, the response to drugs is feeble, and the muscle becomes fatigued rapidly. They declare that the unevenness in the gradient of muscular forces must interfere with the steady progress of food through the intestine, and

1. Frazier, C. H., and Peet, M. M.: Experimental Colonic Stasis, Ann. Surg., 1916, **63**, 729-731.

2. Alvarez, W. C., and Taylor, F. B.: Changes in Rhythmicity, Irritability and Tone in the Purged Intestine, Jour. Pharmacol. and Exper. Therap., 1917, **10**, 365-377.

probably favors the production of colic and gas pains. The conclusion drawn is that it is not wise to purge shortly before an operation in which the bowel must stand the insults of drying, handling, cutting and sewing.

The weight of theoretical, experimental and clinical evidence is therefore in favor of the abolishment of purgation as a routine preoperative procedure.

CONCLUSIONS

Preoperative catharsis has little to recommend it. The disadvantages are: physical and psychic weakness; loss of sleep; loss of body and intestinal fluids; hypotonicity of the intestinal wall; the change in the bacterial flora of the intestine, and the irritability of the rectum and lower colon.

The patient not subjected to preoperative catharsis is not as prone to suffer from thirst, nausea and vomiting, abdominal distention and gas pains.

NOTE.—Since this paper was submitted for publication, a further paper by Alvarez[3] has appeared.

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LOOSE BODIES IN THE ELBOW JOINT*

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It is not generally recognized that mechanical derangement of the elbow joint is occasionally produced by the presence of osteocartilaginous loose bodies. A locking or impediment to motion in the elbow does not cause the same degree of inconvenience and suffering that a like condition would cause in the knee joint. This fact, and the infrequency with which loose bodies occur in the elbow as compared with the knee, account for the general lack of knowledge concerning their presence in the elbow.

Loose bodies in the elbow joint may be classified into two groups: 1. Pieces of joint surfaces that have been knocked off in fractures. Such fragments are definitely due to trauma; they are often quite large and have to be removed in order that function may be reestablished. The condition will not be considered in this article. 2. Bodies not definitely due to trauma, found in numbers varying from one to twenty or more.

During the last three years in the Mayo Clinic, twelve persons were examined who had loose bodies in the elbow joint; in the right elbow in nine, in the left in two, and in both elbows in one. All of these patients were males. Three patients were between 10 and 20 years of age; six were between 20 and 30; two were between 30 and 40, and one was between 40 and 50. Nine of the twelve were operated on. One loose body was removed in three instances; two were removed in two; three were removed in one; and twenty-one, thirty-one and sixty-five, respectively, were removed in three (Figs. 1 and 2).

We have been unable to find any common cause for the formation of these bodies. It is rarely possible at the time of operation sufficiently to expose the joint surface to permit of inspection of the synovial cavity. The surgeon, therefore, cannot determine whether the bodies come from the condylar surfaces, as has been demonstrated in cases of osteochondritis dissecans of the knee; from marginal osteophytic growths due to ostearthritis, or from the synovia, as in osteochondromatosis. Roentgenograms have not furnished evidence as to their origin, as they have done in some cases of osteochondritis dissecans of the knee joint. Ostearthritis of the hypertrophic type has been occasionally demonstrated, and may have been the etiologic factor in the production of the bodies.

Koenig[1] was unable to produce, experimentally, loose bodies in joints. He inclined to the belief that they are all due to a condition of the joint which he calls osteochondritis dissecans. Barth[2] believed that all loose bodies are due to trauma. Von Bergmann,[3] in speaking of loose bodies in the elbow, stated that in his opinion free bodies are referable to an injury, happening usually in youth. In many of our cases there was a history of injury in youth; in others there was no history of either old or recent trauma. Trauma cannot be accepted as the direct cause of these loose bodies; but that it is undoubtedly a factor in many

Fig. 1.—Thirty-one loose osteocartilaginous bodies in the left elbow joint.

cases cannot be denied. Bland Sutton[4] mentions the temporomandibular joint of the skate (*Raja laevia*) as a physiologic example of their presence. In this animal there is a recess communicating with the articular cavity and containing, usually, a collection of smooth, cartilaginous bodies. Rehn[5] has reported loose bodies in the elbow joint, but most articles on the subject in the literature refer to loose bodies in the knee joint. The number of loose bodies in joints varies greatly, depending, probably, on their mode of origin. They may occur in almost any joint. Many writers have not made it clear as to whether the bodies they describe are osteocartilaginous or fibrous. In

3. Alvarez, W. C.: Surg., Gynec. and Obst., 1918, **26**, 651.

* From the Mayo Clinic.

* Read before the Section on Orthopedic Surgery at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

1. Koenig: Ueber freie Körper in den Gelenken, Deutsch. Ztschr. f. Chir., 1887-1888, **27**, 90-109.

2. Barth, quoted by Smith, S. A.: Loose Bodies in the Knee Joint, Canad. Med. Assn. Jour., 1914, **4**, 209-215.

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4. Sutton, J. B.: Tumors, Innocent and Malignant, London, Cassell & Co., 1901.

5. Rehn, E.: Gelenkchondrome, Beitr. z. klin. Chir., 1911, **71**, 817-831.

the dissecting room, Abernethy[6] found fourteen loose bodies in the hip joint of an old woman. Berry,[7] at operation, removed 1,047 loose bodies, described as hyaline cartilage, from the knee joint of a woman aged 22 years. Marsh[8] removed thirty loose bodies from the cavity of a knee joint and five from the

Fig. 2.—Three loose bodies lying in the anterior compartment of the elbow joint; one in the interarticular area.

semimembranous bursa of a man aged 23 years. Most of the bodies in the latter case were detached, but several were still connected with the synovial fringes by slender pedicles. This was evidently a case of osteochondromatosis. Twenty years after, the man had not had a recurrence of symptoms, in spite of the fact that numerous small cartilaginous nodules were left hanging on the synovial membrane. In our series, thus far, there have been no true recurrences; however, sufficient time has not elapsed following operation to make us overconfident on this point. In some cases we could not remove all the bodies, and those remaining may later cause trouble. Shaw[9] has reported a case in which a loose body, on removal, was found to contain the point of a broken needle. It was thought that the needle, accidentally embedded in the subsynovial tissue and causing irritation, had led to the formation of the body which subsequently became detached.

The joint surfaces of the elbow are not subject to direct trauma, though indirect trauma, due to muscular violence, is at times undoubtedly inflicted. Some of our patients had had their first symptoms after unusual exertion, such as throwing a baseball; but that such action produced the loose body is doubtful. It is more probable that attention was at that time first drawn to the elbow by the locking or catching due to the body which was already there. In three of our cases an arthritis was present at the time of examination. Here again it is impossible to decide whether or not the arthritis, hypertrophic and lipping in character, was primary or secondary to the loose bodies, though the latter seems more probable since the ages of the patients were 44, 23 and 25 years, indicating that in two, at least, a primary monarticular hypertrophic arthritis is unlikely to have occurred. The oldest patient had no evidence of arthritis elsewhere in the body.

We know that in the knee joint occasionally the synovia takes on peculiar properties and tends to form multiple loose bodies (osteochondromatosis), and it may be that the same thing occurs in the synovia of the elbow joint; this was demonstrated in one of our cases. The patient, a man aged 26, had sixty-five loose bodies removed from the elbow joint (Fig. 3). The synovial sac was greatly distended and the synovia itself was pouched and pedunculated. Some of the tips of the pedicles were fibrous, and others were becoming cartilaginous. It was evident that these cartilaginous tips could easily drop off, wander about and, as the joint fluid provided their nourishment, grow to considerable size. It is very probable that the bodies may be formed in any one of the various ways mentioned, and that no one cause will explain their presence in all cases.

Syphilis was present in only one of our cases and was contracted two years after the onset of the symptoms in the elbow.

The loose bodies themselves are osteocartilaginous in structure. The outer layer is of cartilage, and the bone is scattered about irregularly as flakes in the remainder of the loose body. There is no distinct center of bone surrounded by cartilage.

Fig. 3.—Multiple loose bodies (sixty-five) in the joint; an example of osteochondromatosis.

The symptoms are variable, depending on the amount of mechanical interference which the bodies cause to the action of the joint. The elbow joint is a true hinge joint, and restriction of motion in such cases is more common than locking, whereas the opposite is true of the knee joint when it contains

6. Abernethy, quoted by Marsh, H., and Watson, C. G.: Diseases of the Joints and Spine, Chicago, Chicago Medical Book Company, 1910, p. 259.
7. Berry, J.: Fifty Loose Bodies Removed from a Knee Joint, Tr. Path. Soc. London, 1891, **42**, 275-276; Multiple Loose Cartilages Removed from a Knee Joint, ibid., 1894, **45**, 138.
8. Marsh, H., and Watson, C. G.: Diseases of the Joints and Spine, Chicago, Chicago Medical Book Company, 1910, p. 259.
9. Shaw, A.: Pendulous Osteocartilaginous Body Excised from the Knee Joint, Having Embedded in Its Cartilaginous Part the Pointed End of a Needle, Tr. Path. Soc. London, 1855, **6**, 328-331.

loose bodies. Some of our patients complained of limitation of motion, a little catching, perhaps, but no distinct locking of the joint. Others had definite locking, released by manipulation and accompanied by severe pain. All had some limitation of motion. Occasionally the joint locks while the patient is asleep, and he is aroused by the pain.

The condition should be treated surgically. The character of the joint and the importance of the surrounding structures occasionally make it difficult to remove all the bodies. If they are considerable in number it will be found that the majority lie in front of, and to the inner side over the ulnar area. On the anterior aspect this is the safest approach to the joint.

OPERATION

The incision is made to the inner side of the biceps tendon, and usually it is necessary to divide the median basilic veins (Fig. 4). The ulnar nerve is behind the condyle and well out of harm's way. The median nerve and the vessels are to the outer side. The incision is carried down, the pronator radii teres fibers are separated and, later, the brachialis anticus fibers are spread.

The joint capsule is exposed and opened. By flexing the elbow to about 45 degrees, a curved forceps may be introduced and the bodies forced out. If this procedure is not successful, the gloved finger may be introduced into the joint and the bodies palpated. Various maneuvers and manipulations may be used, such as palpating with the other hand while the opening into the joint is held apart, and pressing on the joint from the outside, thus forcing the bodies out through the opening in the capsule. If the bodies are posterior in the olecranon fossa, the incision should be made through the lower fibers of the triceps (Fig. 5). If the bodies to be removed are on the radial side, the incision is made to the outer side of the biceps tendon (Fig. 4). The fibers of the supinator longus must be divided, great care being taken not to injure the musculospiral, the posterior interosseous or the radial nerves. Any one of these incisions may suffice, or it may be necessary to employ two or even all three of them. Exceptional care must be taken to make the operation aseptic.

Fig. 4.—Two incisions (internal and external) for the removal of loose bodies from the anterior compartment of the elbow joint.

CONCLUSIONS

1. In my experience, loose bodies in the elbow joint have not been of rare occurrence.

2. The etiology is doubtful. Trauma is a factor but not the sole factor. The synovia may be solely responsible, such a condition being called osteochondromatosis.

3. If left in the joint, the tendency is for the bodies to increase in number; therefore, their removal is indicated, provided the patient's general condition is satisfactory.

ABSTRACT OF DISCUSSION

DR. WILLIS C. CAMPBELL, Memphis, Tenn.: I have never seen a typical loose body in the elbow joint. I had one instance of a large cartilaginous mass blocking the joint, an unattached enchondroma, the result of a trauma, but not demonstrable with the roentgen ray. I believe trauma to be by far the most frequent etiologic factor in the development of loose bodies in a joint. Ridlon recently reported cases of osteochondritis dissecans, in which loose bodies were thrown off from the articular surface, either from trauma or infarct (endarteritis). I operated on a physician, 30 years of age, who, at the age of 12, sustained a trauma that caused severe pain followed by locking of the knee joint. The symptoms suggested displacement of the internal semilunar cartilage, but on operation two loose bodies were found, with a corresponding cavity on the outer aspect of the inner condyle of the femur.

DR. A. R. COLVIN, St. Paul: I had a case of loose body in the elbow joint that was rather suggestive of osteochondritis dissecans. A year after removal of a loose body in the joint he returned with another loose body of about the same size, requiring removal. In the second instance the loose body was connected with one of the fasciculi of the external lateral ligament; and it might be argued that such a loose body was due to trauma. The young man played baseball and thought the trouble due to his efforts in this game; but it seems to me that it was due to osteochondritis dissecans, which is seen most frequently in the knee joint. As to loose bodies in the knee joint: A young man, with a history extending over six years, at first had only pain; later he had trouble in walking, frequent attacks of arthritis (rheumatism), extending over a period of six years. The roentgenogram disclosed a piece of bone about the size of a nickel, surrounded by a groove separating it from the parent bone, situated on the articular surface of the medial condyle of the femur. A diagnosis of osteochondritis dissecans was made. On opening the knee joint, the articular cartilage, of a dull and somewhat yellowish white color, in one area was intact, except for a slight fissure. Cutting around the entire circumference, I lifted out a piece of bone covered on the joint side with articular cartilage and on the superior surface by an irregular layer of fibrocartilage. Earlier writers ascribe the process to trauma; Ludloff suggests that numerous slight traumas transmitted through the attachment of the internal crucial ligament interfere with the blood supply of an area of bone supplied by a terminal artery and it finally becomes loosened.

DR. ALBERT H. FREIBERG, Cincinnati: A few years ago Dr. Woolley and I published the results of a study on the histologic character of material obtained from a particularly interesting case of this kind. Since then I have been able to observe a number of other cases of this same character. It is singular that we should need to look to trauma for an explanation of cases of this type, when in their history we are not able to associate trauma directly with the occurrence of symptoms of this character. To conclude that because a condition looks as if it had been caused by trauma, it must have been caused by trauma, when we are unable to establish a direct connection between the two, seems to me loose reasoning about a loose body. I had the opportunity to observe a case of loose body in the knee—not entirely loose—in a woman of about 50 years of age, who gave no history of trauma. In this case I am able to eliminate trauma altogether, but the histologic examination of this specimen, as in the case of others, disclosed the same condition that Woolley and I reported. In a certain number of these cases—not so often here, perhaps, as in Perthes' disease—the condition is present in both knees. This seems to me very significant in opposition to the theory of traumatic etiology.

DR. ARTHUR STEINDLER, Iowa City, Iowa: I have seen a case of loose body in the ankle joint. The roentgen ray located the body on the upper anterior surface of the astragalus, exactly in the middle. It was removed easily through an anterior incision.

DR. LEO MAYER, New York: I have had no experience with nontraumatic cases of the elbow; but it may be of interest from the point of operative technic to report a case of gunshot wound with foreign body in the elbow. A shell splinter, one-eighth inch long and a quarter inch thick, was situated between the olecranon process of the ulna and the humerus. It was exposed by an incision along the olecranon process. On opening the joint capsule, there was a discharge of slightly turbid fluid. By prying the bones apart it was possible to see the fragment in the depths and gradually pull it out with forceps. I wish to suggest the posterior route in the case of the ankle. Incise directly through the Achilles tendon, open the capsule from behind, and the joint is opened with practically no damage. If the capsule and the tendon are properly sutured, healing will be complete within three weeks after the operation.

DR. CHARLES A. PARKER, Chicago: I have seen one case of foreign body in the elbow joint. There were at least two bodies, as determined by palpation and roentgenogram. The patient would not let me operate. Regarding the formation of these bodies, we again have to recur to the most common place, the knee joint. I removed two from a patient 75 years of age. I did not go into the question of trauma; but she must have had it during her life. One body was free in the joint, and the other, free in a way. It was underneath the cartilage, on the outer side of the median condyle. With an instrument it could be shoved up and down, and the cartilage would move over this. The body was removed. On the margin of the joint were very distinct exostoses, apparently very much like the foreign bodies that I removed. I at first said that they were exostoses from ostearthritis. Then I reversed myself and called the condition osteochondritis dissecans. Possibly both conditions were present in the same joint.

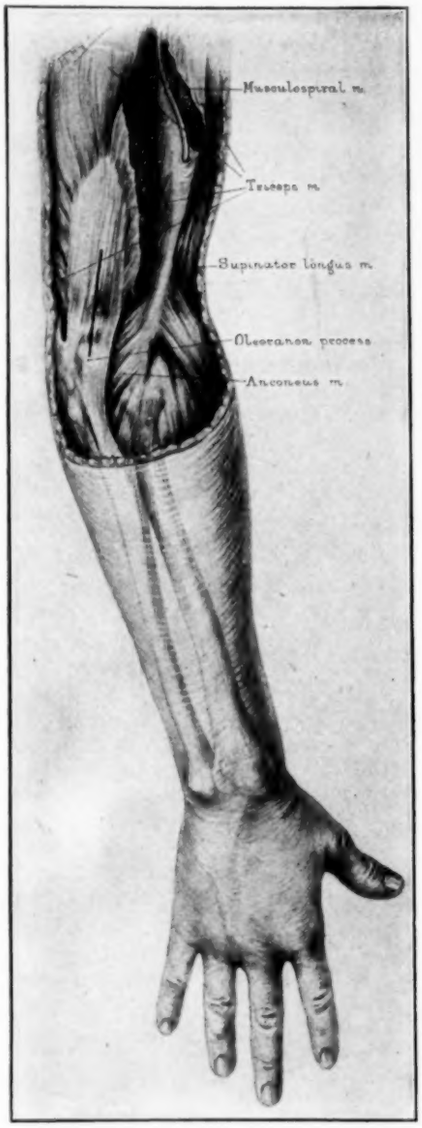

Fig. 5.—Incision for the removal of bodies from the olecranon fossa.

DR. J. D. GRIFFITH, Kansas City, Mo.: History is repeating itself. In 1868, when I was at college, we were taught that there was frequently an idiopathic condition in some cases. Then the pendulum swung the other way in regard to essential causes, and it was said that there was no inflammation without a focus of infection. Now we are getting back to idiopathic work again.

DR. MELVIN S. HENDERSON, Rochester, Minn.: The point that Dr. Colvin brought out about this condition in the knee is interesting. I have seen a case similar to the one he described, and I operated. The only difference was that the body removed was completely separated, and was formed by a fibrinous clot. There had been symptoms of locking; but previous to that the patient had had for four or five years indefinite aching and soreness in the joint, evidence that the condition had been coming on for a long time. The question is, Would that body have remained there if I had not removed it? I agree with Dr. Freiberg that trauma will not account for this condition. It is a definite clinical entity, a disease in which the cartilage becomes brittle and breaks off. Dr. Freiberg and Dr. Ridlon called attention to this, and I showed the little end artery coming down to the crucial ligament. That is one of the most frequent causes of block. But will that also account for these cases in the elbow? Another condition is described, termed osteochondromatosis, but I hardly thought that applicable to these cases. The synovia hangs down as a piece of tissue, and some fibers from the tip become cartilaginous and break off, forming a loose body. It is a reversion to type. The synovial membrane is formed, embryologically, from the same layer as the cartilage in joints. Dr. Mayer spoke of loose bodies lying there. I suppose that he had a difficult time in getting them out and sectioning along the olecranon. It could be done, and the olecranon sutured back; but in most cases we have succeeded in getting the loose bodies out by the other method.

Passing of the Basle Nomenclature.—The *Medical Press and Circular* says that the B. N. A. for teaching purposes in England is dead. The objections to it are manifold and it has produced chaos in English anatomic teaching, as pointed out by Prof. Arthur Keith. It it said that it was never promoted for the benefit of science, but was another of Germany's underhand methods of peaceful penetration for the purpose of impressing on the world the claim of that country as the leading exponent of scientific advancement. It has made more headway in America than in England, where it was never received with favor. Its death knell has been sounded in that country in an authoritative resolution adopted by the Anatomical Society of Great Britain and Ireland, which says "The committee, after consideration of the matter, unanimously reports that it sees no reason for departing from the use of the old nomenclature as the recognized medium of description for employment in anatomic textbooks and departments, or by medical men in general; on the other hand, it thinks there are very good reasons to be urged against the adoption of any other nomenclature for this purpose."

Military Medicine and Surgery

THE PROBLEM OF THE ARTIFICIAL ARM *

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The problem of the artificial arm presents many difficulties. Some of these have been overcome, and some apparently can be; but others from their very nature appear insurmountable. It seems wise, therefore, to get a clear idea of how much is actually required of an artificial arm and how far this demand can probably be met. The chief difficulty in devising an appliance capable of performing the work done by the lost hand is due to the high degree of differentiation of hand function. This is best appreciated by comparing the conditions in the upper and the lower extremities.

When a leg is lost, the chief requirement to be met is that of support. Standing and walking are relatively simple acts, and hence no complicated mechanism is required. It is necessary merely to supply an apparatus made to conform to the shape of the lost member and provided with some means for overcoming jar. Motion in the foot may be dispensed with, except for a simple joint near the ball; if provided, motion is practically always limited to a small amount of mechanically controlled flexion and extension of the ankle. With such an appliance the gait is often without appreciable defects.

An artificial arm of similar construction would serve little more than a cosmetic purpose. When an arm is lost, the chief requirement to be met is that of motion. The appliance must be so constructed as to make possible the performance of a large part of the work of the lost upper extremity; and since this work is almost entirely dependent on the efficiency of the hand, the value of the artificial arm may be estimated in terms of its hand function. The usefulness of the natural hand depends on rapidity and precision of movement, strength and the sense of touch. Strength is the only one of these for which it is possible to make adequate provision. Touch is gone. Rapidity and precision demand accurate control of a large number of movements, some of which depend on the pull of a single muscle, while others require the coordinated action of several muscles. Since only two pulls are usually practical in the artificial hand, it is evident that its usefulness will be necessarily restricted to grasping movements of simple character.

Orthopedic surgeons will recognize at once in this comparison the marked similarity to the limitations of operative procedures for infantile paralysis in the same regions. Where it is merely a question of securing stability, results are excellent; but restoration of the finer movements is quite a different matter.

THE AUXILIARY HAND

In attempting to answer the question of how much is actually required of an artificial arm, the one-armed and the armless must be considered separately. From what has just been said about the natural limitations placed on the artificial arm, it is obvious that the one-armed will use an artificial appliance for few and relatively simple acts. Except in the case of the occasional ambidextrous individual, most important acts are done almost entirely with one hand, the other being merely the helper, or, as it has been well called, the "auxiliary hand." If the right hand is lost, the left is trained to take over the function formerly performed by the right. In the one-armed, therefore, it becomes at the most merely a question of replacing the function of the auxiliary hand. Actually, however, it is even less than this, for, with increasing skill, it soon becomes possible to do many things with one hand which formerly required both. Indeed, this skill soon becomes so great that it is by no means uncommon for the one-armed to discard all apparatus.

A study of the functions of the auxiliary hand shows that for most occupations these are largely of three sorts: weighting, carrying and holding. There are a large number of acts in which its function is merely that of a weight or guide to prevent the object which is being worked on by the other hand from moving or from moving in the wrong direction, as in steadying the paper in writing or the board in sawing, or in steadying and helping to guide a plane. The carrying function is frequently used in order to relieve the other hand and in acts of this nature in which both hands are required, as in using a wheelbarrow. The holding of tools and other objects on which the other hand works constitutes a large part of the work of the auxiliary hand.

PRINCIPLES OF THE WORKING APPLIANCE

In providing for these three requirements, the first may be disregarded, as any type of artificial arm or the stump itself, if long enough, serves perfectly well as a weight. Carrying calls for some form of hook and holding for something in the nature of a clamp. This is borne out by practical experience, since the hook and the clamp have proved the most useful of all devices. While it is easy to provide a hook, the clamp offers more difficulty, and a satisfactory combination of the two has not as yet been devised. It does not seem possible to reproduce the movements of the fingers in an artificial hand so as to give sufficient grasping power for efficient work. Only when all attempt to reproduce the shape of the natural hand is given up and the effort made instead to construct a pure working tool can this be done. Hence there is now general agreement as to the necessity for a working appliance as well as for the so-called esthetic hand. Let us now consider briefly the principal points in the construction of these two types.

The number of different types of both the artificial hand and the working appliance now available is very large. Apparently almost every conceivable combination of mechanical principles has been used. It would seem wiser, therefore, to choose those existing types which more nearly meet the requirements which have just been discussed, and to attempt to perfect them, rather than to try to devise entirely new models.

Of the artificial hands, one of the simpler forms is so constructed that the fingers are fixed in flexion and the thumb is made to move through the action of the shoulder. This meets the indications already pointed out, the flexed fingers providing an admirable hook, and the movable thumb and fixed index finger supplying a clamp suitable for holding ordinary objects. Some improvements are possible in this

* Read before the Section on Orthopedic Surgery at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

model as it is ordinarily constructed. The thumb and fingers should be so formed as to make a more efficient pincer, so that small objects may be picked up more readily. This requires merely a slight change from the normal in the shape of the tips of the thumb and the opposing fingers. Further, by broadening the thumb a little and opposing it to both the first and second fingers, a firmer grip may be secured. In such a hand the grasping power of the thumb is secured either by spring tension or by positive tension obtained through the use of a locking device. If spring tension is used, the grasping power is equal only to the strength of the spring; this will suffice only for small objects. If large objects are to be held or if a firmer grip is needed, some form of locking device must be employed.

This type of artificial hand seems adapted to meet all the demands that are likely to be made on the auxiliary hand. It has also the very decided advantage of simplicity of construction. The type of hand in which the fingers are made to move may be more impressive to the purchaser, but it is hard to see in what particular it is more useful; its more complicated construction is certainly a disadvantage.

WORKING APPLIANCES

Working appliances vary all the way from a plain hook to a complicated universal tool. One, two or three immovable hooks have been used, either alone or with the addition of straps or other attachments. There are also many different combinations of the hook and clamp, the latter being operated either by the remaining hand in the case of the one-armed, or by the action of the shoulder. In many of these clamps the grasping power depends on spring tension; obviously, however, positive tension is particularly necessary in the working appliance, since it is essential that the grip on tools be a firm one. From a study of these different devices and of the demands made on the auxiliary arm, the most useful device would seem to be one resembling two fingers and a thumb, with the fingers fixed and the thumb moving between, and not against, them. When open, this device forms an excellent hook; when closed, all ordinary tools may be properly held. The difficulty, however, is to find a simple mechanism which will give a sufficiently firm grip. Thus far this has not been accomplished.

A single appliance, however efficient though it may be for ordinary occupations, does not entirely solve our problem. In many instances the adaptation of the appliance to the individual occupation is required. This phase of the subject has already received a good deal of study, and there is no doubt that much can be done in this way to fit men for specialized work.

The question of what type of working appliance to supply is bound up closely with the very fundamental one of how far the one-armed, or the armless, should attempt to engage in manual occupations on a competitive basis. Theoretically, and, I believe, practically, the one safe course is to place them only in those occupations in which they can be 100 per cent. efficient. Too much must not be expected of human nature, and it certainly is this to ask employers to face the constant deficit resulting from the employment of men able to earn only from 60 to 75 per cent. of their daily wages.

THE ARMLESS

The armless individual presents an entirely different problem. Instead of provision for the "few and relatively simple acts" required by the one-armed, the demand now is for provision for every act possible. Yet the means at our disposal are the same. With the necessary turning of the armless for his means of livelihood from a manual to a mental occupation, however, the problem is simplified and it again becomes possible to meet the need and make the individual independent. What has already been said about the working and the esthetic hands applies equally well to the armless. With both types it seems likely that a wider range of usefulness will be secured by attempting to adapt the appliance to the function of whichever hand it is intended to replace, rather than to supply two appliances of similar construction.

VALUE OF SIMPLE APPLIANCES AND THOROUGH TRAINING

In studying the problem of the artificial arm, one is struck again and again by the value of relatively simple appliances and the importance of thorough training in their use. With a simple wrist strap, an armless man is able to dress and feed himself and do most of his ordinary daily acts A strap over the shoulder, properly provided with a ring, is sufficient to enable the one-armed man to plow, use a wheelbarrow, spade and pitch hay. A single working appliance has enabled a man who suffered a disarticulation of the right shoulder and an amputation of the left forearm to be entirely independent. After all it is a matter of a little brains and much perseverance.

ABSTRACT OF DISCUSSION

Dr. John Ridlon, Chicago: Muirhead Little of London, who has had a unique experience in the hospital at Rochampton, presented a paper last year in which he said that they had had furnished 6,316 artificial limbs up to May 31, 1917. The whole problem of the artificial arm over there is confined to the simplest appliances, which are found to be the most useful. Of course, it is interesting to see mechanical appliances that can do almost anything that a live arm can do, and for some men they are certainly a great boon; but for the average man, who has only to do certain simple things, simple appliances are all that are required, and the men are better satisfied with them.

Dr. John P. Lord, Omaha, Neb.: Doctors know very little about artificial limbs. It is common for them to refer these patients to the artificial limb maker, and then dismiss them from consideration. That is wrong. In order to know how to make stumps, treat stumps and manage stumps, so as to get the best functional results, it is absolutely necessary for the surgeons to give attention to prostheses.

Dr. Arthur Steindler, Iowa City, Iowa: It is a necessity to take care of the position of the thumb in such a way that it shall not meet the first but the second finger of the hand. I understand that Dr. Silver has given thought to the same idea in the manufacture of the artificial hand, that the direction of the thumb shall not be one of adduction, but one of opposition.

Dr. S. C. Baldwin, Salt Lake City, Utah: One of the most important things in connection with this matter is the treatment of the stump. Dr. Silver has called attention to the necessity for keeping the muscles and tissues in good condition. This is important. Another thing to take into consideration is the hospitalization of the men coming back from the front. A great deal of that has to be overcome before they can have the limbs fitted, for this reason: We do not get a great many of them right away. They come after having been in from three to eight different hospitals, and having had different treatments at these different places; so that it is very necessary that something of that sort should be taken up at once and the men taught early about the use of these appliances and what they are going to be able to do with them. It

is important to get these men ready for artificial limbs as early as possible.

DR. DAVID SILVER, Pittsburgh, Pa.: I should like to emphasize our relation to the artificial limb manufacturer. Our relation to them should be one of the fullest cooperation. They have done an immense amount of work on the problem and have solved it in the most satisfactory way; it is now necessary for us to do our part, and this we have not yet done. By our cooperation with them we may be able to secure still further improvement.

ANESTHESIA AND ANTISEPTICS IN PLASTIC RESTORATION OF THE FACE AND MOUTH

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Plastic restoration of war wounds has made a new requirement of operative surgery. Sliding and turning flaps, bone transplants, secondary flaps, and even skin grafts open tissues that are not infected. The mouth, and particularly war wounds of the mouth, always contain infective organisms. Newly opened tissues should, if possible, be protected from infection in these operations.

The anesthetic devices in general use have in the main proved satisfactory. In addition to conductive and local anesthesia, the chief reliance for general anesthesia has been the ordinary mask and pumps and blowers of various types and combinations.

By none of them, however, may one secure even an approximately aseptic field for operations about the mouth. None of them protect the field from mouth secretions, and none of them permit the use of efficient antiseptics, for the reason

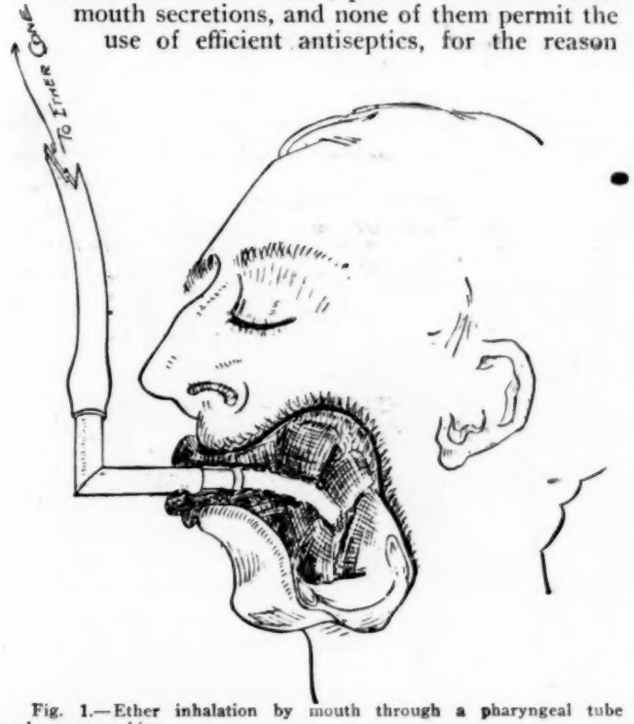

Fig. 1.—Ether inhalation by mouth through a pharyngeal tube and gauze packing.

that the respiratory tract is only relatively protected. An efficient antiseptic, like tincture of iodin, is highly irritative and dangerous in the larynx and trachea, and the exhaust pump—no matter how good—cannot be depended on absolutely to remove every drop of fluid from the pharynx. It has been the custom, consequently, to regard the mouth as a region that could not be sterilized, and to give the well vascularized tissues such credit for resistance to infection that

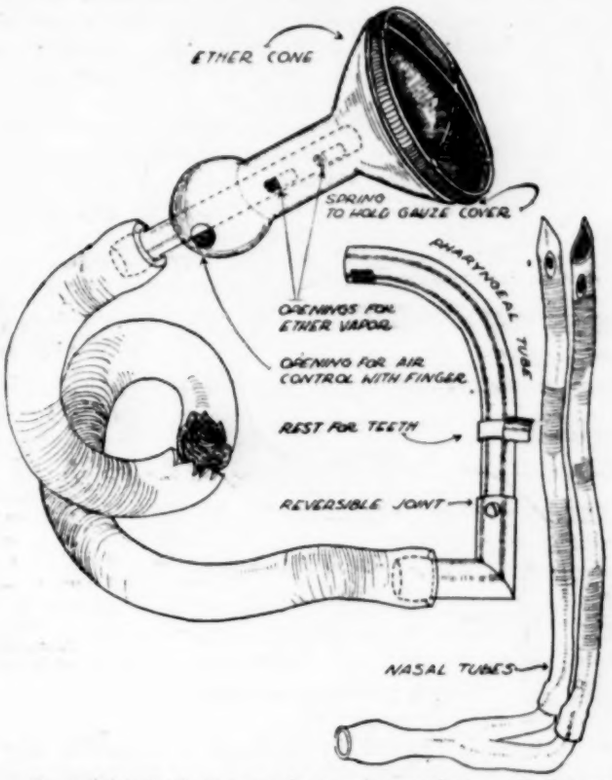

Fig. 2.—Anesthesia air ways for aseptic operations on the face and mouth.

aseptic operations were not only not possible but not necessary. In a measure the reasons might apply to the vagina or anal region. Before operating on these parts, thorough cleansing and sterilization of the surface with strong antiseptics is the rule, and operations without such precautions would not be considered standard procedure. The failure of surgeons to adopt the same method in oral operations is due to the inappropriate methods of anesthesia in general use. The same advantage may be obtained by providing a safe air way for respiration through which the anesthetic may be given and which will securely block the larynx from blood, or antiseptics strong enough to sterilize the surface, and which will, after the site of operation has been cleaned, protect it from reinfection by the mouth secretions.

Ether inhalation by mouth through a large pharyngeal tube and a coffer dam of gauze packing, when properly placed, is superior to any other method in a very large class of these cases. It furnishes that efficient block between the operative field and the respiratory tract so necessary for the performance of ideal operations in this region, and makes possible a degree of asepsis in the operation not possible by any other method (Fig. 1). It is now more than twelve years since I first adapted a curved metal tube and gauze pack to pharyngeal anesthesia by drop ether.[1]

The inhaler that I have devised for these operations is shown in Figure 2. It consists of a curved air way adapted to the mouth and pharynx. The open and

1. Rockey, A. E.: Med. Rec., New York, June, 1906.

slotted end should be so placed that it rests just above the larynx back of the epiglottis. It is provided with a movable joint as indicated. This permits the tube

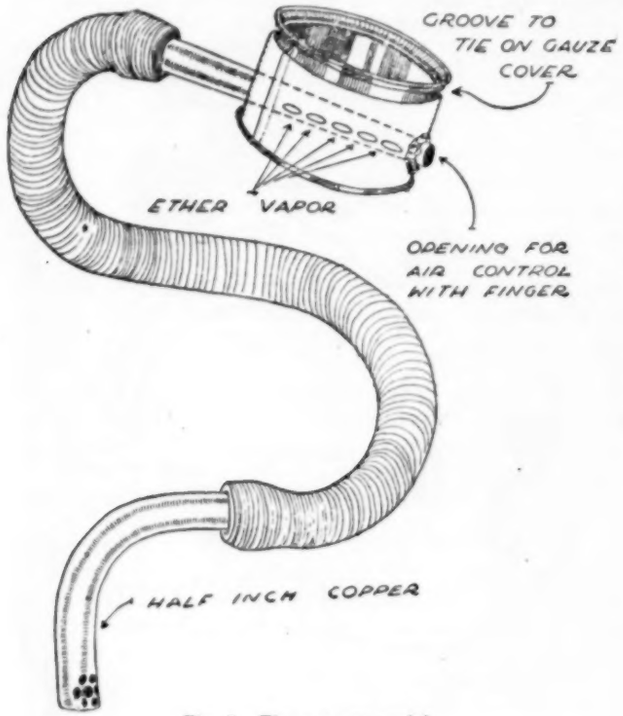

Fig. 3.—Tin cup war model.

to be turned upward for operations involving the mouth and neck, and downward for the face and head. The nasal tubes are adapted from Crile, but are attached to a Y tube so curved that the stem may be firmly fixed over the nose by a strip of adhesive plaster, which insures stability and prevents obstruction in kinking. The pharyngeal tube has an inside diameter of half an inch, and the connecting rubber tube an inside diameter of three-fourths inch. A practical working length for this tube is 30 inches. The funnel is of spun metal. It is provided at the top with crossed curved wires to support the gauze cover, and is surrounded by a groove in which fits a coiled spring to hold the gauze in place. The inhalation tube is so arranged that it is not possible to pour liquid ether into it. The opening to admit air directly into the inhalation tube is placed in the bulb of the handle at a convenient place for finger control.

The demands of war surgery have so taxed the manufacturing resources of instrument makers that it is difficult and expensive at this time to obtain this well finished instrument. For this reason I have designed a war model shown in Figure 3, which is a most efficient substitute. It is made by removing the handle from a common tin cup, and running a groove around the top, on which to tie the gauze. The ether vapor way is made by constructing a half inch tin tube with five one-fourth inch holes punched into the lower side. This is passed through holes in opposite sides of the cup near the bottom, leaving one end projecting about one-eighth inch to serve as a finger air control, and the other end projecting about 2½ inches on the other side. This end may be expanded to three-fourths inch to fit the rubber tube. An air way may be made by bending a half inch soft copper tube, in the form of the original pharyngeal tube, or using the rubber tube alone. If a rubber tube is used, it must be protected from compression by a wooden block between the teeth or by a mouth gag. A Connell or other solid air way, such as is used by anesthetists, is a very suitable substitute. The large size of the tubes gives free movement to the air or other vapor current, and provides also a moderate volume of rebreathed ether and air.

Year by year, as experience has accumulated, my satisfaction with the method has increased. Success may be attained only by minute attention to details. The extension of the respiratory tract across the operative field from the larynx to the ether cone requires first proper adjustment.

A sufficient preliminary hypodermic of morphin and atropin should be given one hour before ether is to be administered. Complete third stage anesthesia must then be produced with the ordinary mask. The pharyngeal tube is then introduced, or in the comparatively few, in which deeper access to the mouth is required, the nasal tubes are placed. The posterior part of the mouth is then well packed with gauze. Much depends on the thoroughness and care with which this is done. The gauze pack forms the necessary dam of protection, both for the respiratory tract and for the field of operation. The inhalation tubes, either pharyngeal or nasal, may be further held in place by an adhesive strip around or over, and then attached to the forehead or face as the character of the operation permits. If this is carefully done, a satisfactory anesthesia may be maintained without interference.

It is essential that the ether be given by some one competent to maintain safely such a degree of anesthesia as will prevent any attempt at vomiting, which

Fig. 4.—A war wound calling for a reconstructive operation (after Blair, V. P.: Surgery and Diseases of the Mouth and Jaws, St. Louis, C. V. Mosby Company, 1917).

might clog or displace the tube, and break the asepsis of the operating field.

These requirements, while not difficult of accomplishment, demand careful attention; but the result

is certainly worth while. We may expect safety in anesthesia, facility in operation, and a degree of protection from infection that cannot be obtained by any other method.

In safety the supremacy of drop ether in many thousands of cases stands unchallenged. The inhaler

Fig. 5.—Operation proposed for condition illustrated in Figure 4 (after Blair).

here shown gives drop ether from what is practically an open mask, as the finger of the anesthetist at all times gives an instant touch control to the air admission or admixture. This is by no means true of an ordinary funnel.

The character of the respiration, which is the great safety indicator in any narcosis, is at all times apparent to the anesthetist by the sound of conduction in the tube.

ASEPSIS

When this method was first used the principal idea was to obtain a satisfactory anesthesia in these operations. The gauze pack in the mouth soon demonstrated the possibility of securing a degree of asepsis not possible without it.

A necessary preliminary is a careful cleaning of the mouth by a dental surgeon. Tartar should be scraped from the roots, and decayed, loose and abscessed teeth should be extracted, as should teeth within or about the diseased area. The greatest use for asepsis in these operations will be found in the reconstructive plastics that are required by war wounds of the face and jaw.

Take, as an example, the condition illustrated in Figure 4, and the proposed operation in Figure 5. It will be admitted without argument that asepsis is of great importance in the success of any plastic procedure, but particularly when bone transplant, such as is here proposed, is required. If this operation is done under any ordinary procedure of anesthesia now in use, infection cannot be avoided. After preparing the patient as described, let us introduce the pharyngeal tube of the inhaler as shown in Figure 1. The gauze pack is then carefully placed, and we may proceed with the cleansing and sterilization of the operative field exactly as in any other part of the body. The operation may be then finished without fear of contaminating large raw surfaces.

After the wound is closed the edges soon have an efficient protection in the film of blood clot between the edges, and primary healing may proceed without the delay and danger of suppuration and sepsis.

Figures 1, 4 and 5 are shown as examples of reconstructive operations that war wounds of the face will make necessary. The introduction of an efficient method of sterilization will enable the operator to avoid the deformities made more difficult of correction by the excess of scar tissue, so common after long suppuration. He may proceed early with the reconstructive work, treating wounds of this region by the necessary excisions and plastics in the same way that experience has shown most advisable in other parts of the body.

THE WORK OF THE TRAINING CAMP AT FORT RILEY*

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After one year of war, it is not necessary to show the reasons for the establishment of training camps for the Medical Department. The need for such training camps was well understood in the Surgeon-General's Office in the beginning, and steps were at once taken which resulted in the formation of three training camps, of which the Fort Riley camp is one.

From its inception, it was thought that the proper principle to go on was to make medical officers 100 per cent. military men, and as a result it was considered that the value of their professional ability would be increased materially and that they would be of more value to our government in whatever position they were placed. There has been nothing in the course of months of experience to disabuse our minds of that primary conclusion. The officers leaving these camps after completing their courses have taken stand second to none, and have been so efficient that time and again high officers of both the line and the staff have stated that those men who have had this training have given services absolutely satisfactory and far superior to men of equal ability who have gone direct from civil life to the divisions and hospitals.

In the beginning, the course as outlined was, as has been intimated, distinctly military with, of course, a considerable amount of professional instruction along medicomilitary lines. The keynote of the basic course has always been discipline, and every effort was made to perfect the discipline of the medical officers who were assigned to the camp. This discipline has nothing of a servile character, but it was distinctly taught and impressed on the physician from his arrival that in doing any work with an army in the field, the prompt and willing obedience to those in authority was not only called for by regulations, but was also an absolute essential to the proper performance of his duties.

Furthermore, it is well understood that the physical condition of a soldier today, whether in the line or in

* Read before the Section on Practice of Medicine at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

the Medical Department, must be as perfect as it can be made. The demand on the strength and the endurance of every one in the active theaters of this war has been stupendous, and so a carefully thought out plan for the physical instruction of the new medical officer was started immediately on his arrival. This physical instruction gets progressively more strenuous, and the results have shown that the officer leaving the camp after a three months' intensive course is physically capable of performing his duties and can stand up to the terrific exertion that is necessary.

The medical officer in all his work in the Army comes in very close contact with the enlisted man; and unless he understands the point of view of the enlisted man, he is incapable of handling his work as satisfactorily as the government requires him to handle it. Therefore, at this training camp, he is put in the position of the enlisted man by being accommodated in barracks, placed in a company in which his rank, whether he is a lieutenant, captain or major, is not considered, and where he can see plainly placed before him the reasons for all of the numerous regulations put forth for the governing of the armies in the field.

The basic course is continued under the principles outlined above for three months, and in that time the officer, in addition to his training, discipline and physical development, receives instruction in Army regulations, the manual of the Medical Department, and all of the medicomilitary work that a medical officer should know. The last half of the course is taken up with actual field instruction with regimental detachments, etc., giving the officer maneuvers and field services in which he takes an active part. The intention is not to perfect the medical officer in the duties of his office in the time allotted, but to give him a ground work on which can be built the instruction and experience that he receives when he leaves the camp and takes up his duties with a division or hospital. He is more capable of quickly adapting himself to the conditions as he finds them and of giving his very best work to the country.

During the first months of the existence of this camp, many men were sent out to the different divisions and hospitals, and the results were good. It was seen early, however, that something more than the strictly military instruction could be instituted with profit to all concerned. This conclusion was arrived at early, and efforts were made to impress the authorities in Washington with the importance of establishing schools at this training camp for the professional instruction of medical officers. Not that it was considered necessary to give the physician from civil life a general medical education; we knew he had that, and in most cases this education was of a first-class character. But certain special branches of medicine require more attention in military work than in civil life. Of these, receiving the first consideration from that standpoint, were general surgery, internal medicine, roentgenology and orthopedics. In November of last year, it had become so impressed on the heads of those departments in the Surgeon-General's Office that this work could be done most successfully at the training camps that it was so ordered, and separate schools were established at the camp for this instruction. An instructor force composed of some of the most prominent men in those lines in the country was provided, and by using the clinical material always present at the base hospital at Fort Riley, instruction of a very high character was given, and the men turned out from these courses were as well trained as could possibly be expected from the time allowed. And it must be emphasized that these officers, by being at the camp and receiving a certain amount of the basic instruction as well as the professional side, were as well drilled in their military duties as in their professional specialties.

In the Army, the preventive side of medicine receives more attention, and properly so, than the curative side. This, unfortunately, is opposed to the principle underlying the government of the civil communities and, therefore, well trained sanitarians and epidemiologists are few in civil life. This necessitated the instruction of bright, well balanced men in such lines, so as an important adjunct to the training camp activities were established special schools for sanitation and epidemiology. These schools were under the direction of trained men in those specialties, and the medical officer who was selected to take up this work was given not only didactic instruction, but also a large amount of practical work in the way of sanitary inspection, control of epidemic diseases and the construction of sanitary appliances. For this instruction, we have at our door the large cantonment at Camp Funston in which our sanitary inspectors in training were given a free hand; and a great many of the problems of the cantonment, many of which were large, were handled entirely by these departments in our camp. The camp itself, from the standpoint of sanitation and epidemiology, was handled by those departments, and the results in the way of communicable diseases show what should be and could be accomplished by the Medical Department if they had a free hand. From the beginning, the noneffective rate at Camp Funston —on the same reservation—was 20 or more per thousand larger that at the training camp, and whereas we had a comparatively small number of cases of pneumonia during the last winter, Camp Funston had several times the number in proportion to the size.

Attached to the department of sanitation at the camp is a sanitary laboratory in which not only is the medical officer in training enabled to study, under practical demonstration, the sanitary appliances used by the Army in the field, but also constant experimentation with new apparatus is being made.

The sanitary laboratory, though a distinctive institution, is not the only department in this camp in which practical instruction is given. The practical method is carried out in every department, and as far as possible actual demonstration of the methods of the Army and of the material of the Medical Department units, with their practical application, is given in every department, the effort being always to subordinate, as much as possible, the didactic to the practical method of teaching.

If the training of the officer was carried out at a camp distinct from that used for the training of the enlisted men, the officer would not have any idea, or a very imperfect idea, of the handling of the enlisted force. Therefore, as a part of this training camp, the enlisted men of the Medical Department are trained both generally and in special organizations, such as ambulance companies, field hospitals, evacuation hospitals and base hospitals. The officer in training comes in close contact with these units, he is detailed for service with such units, and finally at the end of his training, if we are able to keep him for his full three months, a great many of them are assigned to organ-

izations here at the camp for permanent duty to go overseas with these organizations.

The results have been excellent. Individual officers have been sent all over the country for duty with divisions, base hospitals, depots, etc., and as a rule they have been successful and you will find our graduates holding the most responsible positions in the Medical Department, both here and abroad.

I appreciate that there has been in times past a feeling among certain members of the profession that the training camp was not necessary or proper. But one has only to interview the hundreds and thousands of officers who have passed through these camps to appreciate the strong feeling that the camp was not only worth while, but a decidedly essential part in the organization of our Army. The *esprit de corps* engendered is such that the officer going out into the world, so to speak, though feeling strongly his duty toward the country, his feeling toward the camp is so marked that he hesitates to do anything that would bring the least discredit on the insruction received here. This attitude is expressed most clearly in an article written by a reserve officer at the camp for the Year Book:

It is a great game and we love it. Future peoples may see a greater, but none should miss his share in this. 'Varsity, scrub or substitute, we have been ready and willing to carry the ball or coach the players. Oh, yes, there has been adverse criticism; castles of gloom have been erected, only to be razed by intelligent accomplishment. Let none conclude there may have been any underestimation of the mammoth task allotted. We know that thousands of our strongest and best manhood must unflinchingly face engines of mutilation and destruction, so effective and so terrible that one can well conceive diabolical ingenuity in their construction. The formation of a medical department adequately to care for so immense an army as is necessary might well stagger the most capable and efficient officers and students of the art of war. But could all see the well formulated plans; the carefully drawn calculations; the many times threshed over methods; the massing of resources; the grasping of benefits from allied experience, then would they realize that the Medical Department is playing the game, hitting the line, and advancing the ball. Adverse criticism, yes, from outsiders, slackers and failures. It is no disgrace to enter the game and fail; the disgrace lies in not entering at all, or, having entered, in blaming the game for the failure. The humiliating part, the discouraging part, the pitiful part of it all is that one can enter one of these camps; take the training; be thrown in contact with this splendid spirit of patriotic devotion and sacrifice, and yet never comprehend nor grasp the soul of the reason why the stupendous effort is made. He has lost—no, he has never known, the divine inspiration of the magnificent sacrifice.

Birth and Death Registration.—Hawaii has recently been included in the registration area for deaths, which now comprises twenty-seven states, forty-three cities in other states, the District of Columbia and the territory of Hawaii, covering 73 per cent. of the total population of the United States and Hawaii. The collection of death statistics was begun by the census bureau in 1902, and the first report covered the years 1900 to 1904. Reports have been published yearly since. Birth registration is not as complete as that of deaths, only nineteen states so far having come within the requirements of birth registration, containing 51 per cent. of the total population as against 31 per cent. two years ago, when the collection of birth statistics was begun. Since the recent military registration, the importance of birth registration has become more apparent, but until the matter is placed under federal control or supervision, complete registration of births and deaths will not be secured. Up to the present, it has depended on state or municipal legislation and enforcement.

SYSTEM FOR RAPID BUT THOROUGH EXAMINATION FOR PULMONARY TUBERCULOSIS *

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Standardization of all war measures makes for efficiency, and the elimination of every unnecessary motion, be it in making a piece of machinery or in examining a recruit for tuberculosis, helps win the war. As a rule, in the examination of the lungs, from five to ten minutes is wasted because the examiner has given no thought to the development of a system calculated to save time, while yet being thorough.

If the routine here given be followed, examinations may be made rapidly, and yet with a considerable degree of accuracy.

The subject sits on a stool and squarely faces the light, erect but with shoulders relaxed.

1. The examiner, standing in front, notes the configuration of the chest, especially retractions above or below the clavicles, and the motion with quiet breathing; also the location of the cardiac impulse.

2. The examiner, standing behind, looking downward on the anterior aspect of the chest, notes retraction above of below the clavicles, and the motion with (*a*) quiet and (*b*) deep breathing, noting lagging and limited expansion.

3. The examiner, standing behind (close up against subject), by palpation tests the motion ("lifting power") of the thorax by placing the hands on the front of the chest. Then with hands in the same position but with much lighter pressure, he observes the tactile fremitus.

4. The examiner, standing in the same position, divides the supraclavicular spaces into three segments by two anteroposterior lines. The corresponding segments are then percussed with a very light stroke. (To bring out slight dulness, the subject faces into a corner of the room.)

5. The examiner sits squarely in front of the subject. One may from this position again test the motion of the upper part of the chest. By percussion determine the lower border of the lungs at the anterior axillary line, on quiet breathing and deep inspiration. Then percuss upward, comparing corresponding areas, including the axillae and direct percussion of the clavicle.

6. The heart is auscultated, especially for mitral stenosis, which may cause symptoms suggestive of tuberculosis.

7. The breath sounds (on moderately full, slightly rapid but quiet respiration) are noted from below upward, four areas on each side, the last being above the clavicles.

8. Without changing the position of the stethoscope from the last position of No. 7, the examiner begins auscultation for râles (forced expiration and cough), searching with especial care the inner and outer parts of the supraclavicular fossae and the upper three interspaces and the apex of the axillae, but disregarding the crepitations in the lower axilla and over the sternum, which come late in inspiration and disappear with deep breathng (marginal râles).

9. The subject is turned with his back toward the examiner, who observes the fremitus, determines the expansion at the base, and percusses the lungs from below upward.

10. The breath sounds are noted from below upward, four areas on each side, the last being the supraspinous fossae.

11. Without changing the position of the stethoscope from the last position of No. 10, the examiner auscults downward for râles (expiration and cough), examining with special care

*A description of the system referred to by Stoll, H. F.: Simplified Rules for Tuberculosis Examinations, THE JOURNAL A. M. A., March 2, 1918, p. 605.

the apexes and region adjacent to the second and third thoracic vertebrae. Do not neglect to listen over the scapula.

12. When rapidity is necessary, special study of the vocal resonance and the whispered voice need not be made, unless percussion or breath sounds reveal an abnormality.

13. When great rapidity must be practiced, inspection and auscultation with cough (1, 2, 8, 11) give the most information.

14. At least half the time taken by the examination should always be spent in the search for râles (expiration and cough).

TRENCH FEVER*

A REPORT OF CLINICAL OBSERVATIONS AND RESEARCH AS TO THE ETIOLOGY, PATHOLOGY, PROPHYLAXIS AND TREATMENT OF TRENCH FEVER AMONG TROOPS

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HAMPSTEAD, ENGLAND

(Concluded from page 113)

EXPERIMENTAL WORK

We now turn to our experimental work, undertaken, first, to determine the mode of transmission of trench fever.

MODE OF TRANSMISSION

That the disease was transmissible from man to man was shown by McNee and his fellow workers when they passed on the infection by means of the syringe, injecting the blood from a trench fever patient into a healthy man. We have confirmed this observation on two occasions. The incubation period in the two cases varied considerably, apparently with the stage of the disease at which the patient had arrived from whom the infected blood was obtained.

McNee further adduced evidence that the infective agent was to be found in the blood corpuscles themselves, and that, even when the blood was laked, the virus would not pass through a filter. Our attempts to confirm or refute this have so far proved inconclusive, for the laked blood used in Experiment 5 failed to infect, though unfiltered, and therefore Experiment 6 with the same after-filtration is of no value. That the blood used was originally infective is proved by the success of Experiment 4, in which the untreated whole blood from the same patient gave rise, after injection intravenously, to an acute and typical attack of trench fever. We can only suppose that the distilled water employed to lake the blood was sufficient to destroy the virus — a point in support of the supposition that trench fever is not a bacterial infection.

The evidence for suspecting the body louse as the transmitter of the disease has been very conflicting in the past. We would instance the statements of Grieveson, Hurst, Weldon and Davies, Dyke and recently Sundell and Nankivell.

Our own attempts to transmit the disease by means of the bites alone of infected lice have proved entirely unsuccessful:

ATTEMPTS TO INFECT WITH BITES ALONE

In Experiment 1 an attempt was made to infect by bites alone, the possibility of mechanical transmission being excluded, as the lice were never transferred from the trench fever patient to the healthy man until after the lapse of a period of three hours, and on only two occasions in less than six hours. Altogether the experimental subject received not less than 9,518 louse bites; the chances of infection when the various feeds, on numerous trench fever patients, are taken into consideration, amounted to at least 33,965. No signs of trench fever have been detected in the man experimented on during a period of more than two months' observation.

Experiment 2 was similar to Experiment 1 in all respects during the first twenty-nine days of louse feeding. Thereafter no attempt was made to exclude mechanical transmission, and lice were frequently transferred from numerous febrile trench fever patients to the healthy man at short intervals and on several occasions before the feed on the trench fever patient was complete, in the hope that the lice would continue feeding at once. Such attempts to infect were continued almost daily for fifteen days. The louse bites totaled 13,224, and the chances of infection, 52,081. This experiment gave equally negative results, though the subject has been observed for more than a month since louse feeding ceased, or during a period of nearly three months in all.

INOCULATION BY SCARIFICATION

While carrying out the last two experiments we were struck by the fact that neither of the experimental subjects was ever seen to scratch himself or to show evidence of having done so. It was determined, therefore, to try to discover whether the failure to infect was attributable to this cause. Experiment 8 was therefore devised.

Excreta were collected from entomological boxes containing 576 lice, all of which had been fed on many recent trench fever patients during the previous twenty-seven days, their last feed being six hours prior to the time of collection. The excreta were obtained by tapping the boxes containing the lice so that the powder, in which the excrement results fell through the fine mesh gauze cover of the boxes and was collected in a sterile watch glass. For this reason the excreta obtained were thoroughly dry as far as could be observed with the naked eye. Feb. 5, 1918, a suitable volunteer having been obtained, a small surface of skin on the outer side of the upper arm was lightly scarified so that blood was just drawn. A portion of the collected excreta was dusted into this blood and rubbed up into a paste by means of a previously sterilized needle. The scarified area was allowed to dry in the air and the shirt sleeve then pulled down over it without the application of any dressing. The skin before scarification had not been treated in any way, nor had the volunteer ever been verminous or bitten experimentally by lice to our knowledge. Eight days later, February 14, a febrile illness commenced which we believed was undoubtedly trench fever; a relapse followed on the sixth, seventh and eighth days of the disease, with recurrence of symptoms, though the highest temperature recorded was only 99.6. On the evening before the development of the disease a similar scarification and inoculation to that of February 5 was performed, and later the same evening the patient's temperature was found to be 99.4 though he appeared to be otherwise in his usual health. The lice from which excreta were collected for this experiment had all fed on the two volunteers used for Experiments 1 and 2, having continued to feed on them up to the day Experiment 8 was performed. The lice used for our biting experiments are therefore known to have been certainly infective.

On the same day another volunteer was scarified in like manner, and two lice, recently fed on a trench fever patient, were squashed over the scarified area. It seemed that such an inoculation might often take place under natural circumstances. From hatching, these two lice had fed daily for thirteen days (from the eleventh to the twenty-third day of trench fever attack) on the patient whose blood had proved to be infective in Experiment 4. During this period the trench fever patient's temperature was only once above normal (99 F.), six days before the lice were taken for this experiment. In addition, the lice received a feed on a febrile trench fever patient, whose nineteenth day of disease this was, fifteen minutes before their use for inoculation. No local sepsis or glandular enlargement resulted in either of these scarification experiments. After an incubation period of ten days, the volunteer developed trench fever. The onset was somewhat gradual, though the fully developed disease was typical, with frontal headache, pain in the lumbar region, and conjunctival congestion. No definite relapse occurred, though the temperature was just above normal on the evenings of the seventh and eighth days. Cardiac arrhythmia was detected for the first time on the fourteenth day of the disease, and then only for a few hours. As in the previous experiment, scarification was repeated before the onset of trench fever. Convalescence was rapid and recovery apparently complete. On the second occasion, three days before the onset of trench fever, sixty lice were emulsified in 1 c.c. of physiologic sodium chlorid solution and applied to the scarified area. These lice had fed twenty minutes previously, for thirty minutes, on two febrile trench fever patients, and all contained fresh blood when squashed.

In estimating the incubation periods in these two experiments, we have disregarded the second scarification and inoculation in each case, our justification being the evidence obtained as to the incubation period in similar scarification experiments performed subsequently. We have shown lately that 10 c.mm. of active trench fever blood when rubbed into the scarified skin will not produce trench fever—10 c.mm. is about the amount of blood contained by the eleven lice used in the last experiment.

With as little delay as possible three further volunteers were obtained and inoculated with excreta from lice previously fed on various trench fever patients (Experiments 10, 11 and 12). These experiments were simply a repetition of Experiment 8, and all proved equally successful.

In Experiments 10 and 11, the excreta were used fifteen minutes after collection. In Experiment 12 the excreta were kept in a watch glass for one hour and fifteen minutes before use.

Some of the lice from which the excreta were obtained had fed daily for the previous thirty-five days on various febrile and afebrile trench fever patients.

Of the three volunteers, the first commenced his trench fever attack, after an incubation period of six days, by rolling out of his chair at breakfast. When placed in bed he complained of frontal headache, but was in such a state of mental confusion that his statements were unreliable, and his memory of this period has since remained a blank. The attack proved typical and severe, though without bone pain, and was followed by characteristic relapses with a return of symptoms. The second volunteer showed an entirely different onset. He became gradually ill and took to his bed complaining of headache and vague pains in the limbs two days before his temperature rose. The incubation period in this case was seven days if the first rise of temperature is considered as the onset of the disease. The fully developed attack was characteristic, with frontal headache, anorexia, slight tenderness of the shins, lumbar pain, and tenderness below the right costal margin. On the following day, after a very restless night, the patient was complaining of pain below the left costal margin, and the shins were more tender. A white blood count gave 12,500 leukocytes per cubic millimeter. By the fifth day of the disease the patient was up and feeling quite recovered. No febrile relapse has followed, but the patient has begun to feel weak and depressed and has complained of pain in the legs and the region of the spleen.

The third volunteer developed trench fever after an incubation period of eight days. On the day of onset he was seen by one of us at noon. At that time he appeared quite fit, and his temperature was normal. After eating his midday meal he went out for a walk, and while out his "legs gave way under him." He returned home with difficulty; feeling cold and drowsy, he lay down and went to sleep. He states that on waking he micturated freely, was nauseated, and was suffering from frontal headache. When seen at 2 p. m. his temperature was already 102.6, and he was obviously ill.

The following day the spleen was easily palpable but not tender. No bone, skin or tendon tenderness could be elicited. This fever wave lasted sixty-two hours. After a period of apparently normal health an acute febrile relapse took place on the sixth, seventh and eighth days of the disease. At this time the calf muscles and Achilles tendons of both legs were very tender. On the twenty-eighth day of the disease, definite shin bone pain and tenderness were complained of.

From these results it appeared obvious that the excreta of lice fed on trench fever patients were capable, when applied to an abraded skin area, of producing a febrile illness similar in its relapsing character and general clinical picture to the disease at present known as trench fever.

Experiment 15 did much to confirm the view that we were actually producing trench fever.

Five c.c. of whole blood from the volunteer infected by scarification with louse excreta in Experiment 10 were injected intravenously into a healthy man. After an incubation period of five days, an attack of fever developed with frontal headache, conjunctival congestion, lumbar pain, shivering, sweating and later pain in the shins with tenderness of the calf muscles and Achilles tendon, in fact, typical trench fever. The onset of this disease corresponded exactly in point of time with the commencement of the first relapse of the man whose blood had produced the infection. Typical relapses followed. On the same day as this whole blood transmission was performed, unfiltered serum from the same volunteer (Experiment 10) was inoculated intravenously into a healthy man (Experiment 16). The serum was obtained as follows: Twenty-one c.c. of venous blood were withdrawn and transferred to two centrifuge tubes, no citrate being added. The blood was allowed to clot at room temperature. Three hours later the clots had fully contracted, but the serum remained tinted, and microscopic examination of a small quantity showed it still to contain blood cells. The tubes were therefore centrifugalized for fifteen minutes. One tube remained slightly hemoglobin tinted throughout, and so was rejected. From the second, 4.5 c.c. of clear straw-colored serum were obtained, and this, three hours and twenty-five minutes after withdrawal, was injected intravenously. The volunteer remained healthy during the following thirty-six days' observation, and the result must therefore be considered to be negative. It seems possible that the unfiltrable virus we are dealing with may be capable of being thrown down by the centrifugalization employed, so that this serum transmission experiment awaits repetition.

NORMAL LICE

The foregoing experiments give rise to the question: Is trench fever a disease of normal lice; are excreta from them ordinarily infective?

Fresh lice were therefore obtained from Bacot's stock at the Lister Institute, and the excreta collected from 500 of these during five days' feeding on a healthy man. The excreta were well mixed and rubbed into scarified skin areas of two healthy volunteers (Experiments 17 and 18). Both men remained perfectly healthy for twenty-five days, and were then considered to be available for further experimental work. Our question seemed, therefore, to have been answered. Trench fever is not a disease caused by normal lice, and Bacot's stock with which we are working may be considered to be not infected. Cultures of the excreta used in these normal lice experiments showed what we take to be the organism of trench fever described by Jungmann. This diplobacillus would therefore appear not to be the cause of trench fever.

That excreta of lice fed on trench fever patients could infect when recently passed was therefore accepted.

DURATION OF INFECTIVITY OF EXCRETA

Our next problem to determine was, Would such excreta retain their virulence for long periods?

For this purpose the remainder of the excreta proved to be infective in Experiments 10, 11 and 12 was added to excreta collected from many other supposed infective lice.

The whole of these excreta had been kept in glass tubes at room temperature and frequently in sunlight, for sixteen days. The excreta were inoculated into a scarified skin area of a healthy volunteer (Experiment 21). After a seven days' incubation period, trench fever developed. The onset was sudden with headache, conjunctival congestion and the usual anorexia and thirst of fever. This fever wave lasted ten days and was certainly suggestive of a modified typhoid attack. On the third day three loose brown stools containing blood and mucus were passed, but cultural and microscopic examinations of the stools for enterica and dysentery were negative. Mr. Dobell has very kindly examined six stools from this patient and reports they were all negative for *Endameba histolytica*. He adds that "the only protozoa present are the encysted forms of the common colon ameba (*E. coli*) with which the patient is very heavily infected," and gives as his opinion that "the patient is not infected with *Endameba histolytica;* and therefore that his attacks of 'dysentery' accompanying his trench fever were almost certainly not connected in any way with this parasite." On the fifteenth day of illness an acute febrile relapse commenced. The patient vomited once on the fifteenth day and suffered from the same symptoms as during the first days of illness, with the exception of the diarrhea. No pains in the back or limbs and no splenic change could be detected during either initial attack or relapse. Further blood tests for enterica proved negative, and on the clinical course and temperature chart of the case we based our diagnosis of trench fever. This patient has had further intermittent fever and has developed disordered action of the heart.

How much longer such excreta are infective remains to be proved, but that old louse excreta may be virulent without the presence of lice must be accepted, and has an important bearing on prophylaxis. Such excreta are very light when dry and can easily be blown about, so falling on abraded surfaces and wounds or into food and drink.

EXCLUSION OF INFECTION BY MOUTH

Could infection take place by the mouth? at once became an important question.

Two volunteers were therefore fed once daily, for fifteen and nine days, respectfully, with bread containing louse excreta which were known to be infective. At the same time some of the fine dry excreta were snuffed up the nostrils of each man (Experiments 13 and 14). Forty-five days later both men appeared in their usual health; this was twenty-five days since the last contaminated meal. In the interval one of the men had had an acute exacerbation of chronic bronchitis, but both men had remained free of trench fever.

We believe, therefore, that trench fever is not communicable by the mouth, though further experiments are being undertaken.

HEREDITARY TRANSMISSION IN THE LOUSE

A test for hereditary transmission of trench fever in the louse was next made (Experiment 22).

Eggs were collected from boxes of trench fever infected lice. The larvæ as they hatched were placed in a clean new box and fed on healthy men. Nineteen days later, the lice being then adults, the excreta passed by them during a period of three days were collected and rubbed into a scarified skin area of a healthy man. No trench fever symptoms resulted during twenty-six days' observation.

We may therefore conclude that trench fever infected lice do not transmit the virus to their offspring.

TIME WHEN EXCRETA BECOME EFFECTIVE

Is the louse simply a mechanical transmitter of trench fever, or does a developmental stage of the virus take place? were the next questions to be answered.

Five hundred fresh lice were obtained from Bacot's stock and placed in two clean boxes. For two days these lice were fed on healthy men, and their excreta collected and retained, in order that they might be used later for control experiments if necessary. The lice were then fed five times during twenty-four hours on a patient with an active febrile case of trench fever whose temperature fell from 101.2 to 98 and then rose again to 98.6 during the period of feeding. The patient at the time was suffering from frontal headache and pains all over the body, especially in the loins and shin bones, with later tenderness of the calf and thigh muscles. This was the seventy-ninth day of this patient's disease, he having been previously afebrile for thirty-eight days while under observation by us. Thereafter during a period of thirty days the lice were fed only on healthy men, receiving two feeds daily and being kept in an incubator at 30 C. (86 F.) during the intervals between feeds. At the end of each twenty-four hours the lice were transferred to a new clean box, care being taken that, as far as possible, their excreta were not transferred with them.

Daily, during the same time, the excreta passed by the lice during the previous twenty-four hours were collected and placed in a sterile glass tube.

Owing to lack of sufficient volunteers, it was not possible to inoculate men daily with the excreta so obtained. In order to cover as long a period as possible, the excreta passed during the first, third, fifth, eighth, twelfth and twenty-third days were tested by inoculation into scarified skin of successive volunteers (Experiments 23, 24, 25, 26, 27 and 30). The excreta were inoculated each time on the day of collection, with the exception of the excreta collected on the twenty-third day, which were kept for twenty-four hours before being used. The first four men remained healthy, after inoculation, for twenty-five days or longer.

The man inoculated with excreta collected at the end of the twelfth day was the first of the series to develop trench fever. In this case the onset was sudden after an incubation period of eight days. The first wave of fever lasted seventy-two hours, the maximum temperature attained being 103.8 on the second day. The symptoms were general malaise, frontal headache and pink eye, with later backache and tenderness of the muscles and tendons of the legs. With the fall of temperature on the third day, profuse sweating occurred, and pain below the left costal arch was complained of. The pulse remained below 80 throughout the initial attack. Relapses followed.

The man inoculated with excreta passed by the lice during the twenty-third day developed trench fever after eight days' incubation. The onset was sudden with frontal headache, pink eye, and pain in the lumbar region, hips and knees. The painful areas were not tender, though the patient complained of feeling so sore that he could not lie still. The temperature chart was that described as "saddle-back." A similar series of experiments has lately given positive results for the seventh, ninth, tenth and eleventh days, with negatives for the first, sixth and eighth.

It appears from these results that the excreta from lice do not become infective for some days after the lice have fed on a trench fever patient. The exact number of days lies betwen eight and twelve. Such lice continue to pass infective excreta up to the twenty-third day, at least, while feeding only on healthy men.

RESISTING POWER OF THE VIRUS

To test further the resisting powers of the virus of trench fever, as it exists in the excreta of lice, a series of three experiments (32, 33 and 34) was carried out.

A large quantity of louse excreta was collected from various sources and well mixed. Some of this excreta had been proved to be infective in Experiment 21; all was believed to be infective. This mass of excreta was divided into four parts.

The first part was bottled and kept for future work.

The second part was rubbed into the scarified skin of a volunteer in equal portions on three successive days. This was a control experiment to prove the infectivity of the material dealt with (Experiment 32).

The third part was placed in a glass tube, previously warmed, the mouth of which was then closed with a plug of dry absorbent cotton. The tube was immediately placed in a hot-air bath registering a temperature of 55.7 C. and kept there for twenty minutes, by which time the temperature of the bath had risen to 56 C. The excreta remained thoroughly dry throughout. A portion of it was then rubbed

into the scarified skin of a healthy man. The following day the balance of the excreta was reheated to 55 C. for twenty minutes, as there seemed some chance that the excreta had become contaminated in the interval. This reheated excreta was divided into two portions and one rubbed into the scarified skin of the same man on that day and the other on the next (Experiment 33).

The fourth part was placed in a glass tube, the mouth of which was then closed with absorbent cotton and the tube placed in a vapor bath registering 80.5 C. and kept there for ten minutes. The excreta became slightly moistened during the process. On removal it was divided into three portions and these were rubbed into the scarified skin of one healthy man on each of three successive days (Experiment 34). This degree of heat was employed as sufficient to destroy a virus other than a spore-bearing organism.

A temperature of 56 C. for twenty minutes was employed in the previous experiment as being the temperature of dry heat necessary to disinfect clothing.

The man inoculated with the unheated excreta developed trench fever after an incubation period of eight days. The onset of the attack was sudden with frontal headache, pain in the muscles of the thighs and left arm, shivering, sweating, a marked leukocytosis and later lumbar pain. A febrile relapse followed on the sixth, seventh and eighth days, during which definite shin bone pain was complained of in both legs. No tenderness, however, was elicited.

Vertigo was complained of in the interval between these two febrile waves.

The repetition of the inoculation in this case made no apparent difference in the course of the disease or the temperature curve. The chart with the two-hourly observations that we are in the habit of making, illustrated the rapid fluctuations of temperature, pulse rate and leukocytosis which are so characteristic of the febrile stages of the disease. The gradually mounting leukocyte count during the last four days of incubation was well brought out.

The excreta heated to 56 C. proved equally virulent. After an incubation period of eight days the volunteer developed trench fever. The onset of the attack was sudden with frontal headache, slight pink eye and a moderate leukocytosis. A febrile relapse with the same symptoms followed on the sixth, seventh and eighth days, with the second relapse commencing on the thirteenth day. The whole attack was mild, without limb pains, but otherwise characteristic. The patient's disease has been passed on to others both by the syringe and by lice.

The man inoculated with the excreta heated to 80.5 C. remained healthy.

A temperature of 80.5 C. must therefore be considered as sufficient to destroy the trench fever virus, which is, in consequence, not a spore-bearing organism. The lowest temperature required to disinfect as well as disinfest the clothing of trench fever patients is still being investigated.

TESTS FOR IMMUNITY

Many patients reaching us from France gave a history of repeated attacks of trench fever. Were such attacks reinfections or relapses?

We have attempted to reinfect five men with the following results:

The first patient has passed through a typical trench fever attack with a roughly seven day periodic fever, shin pains, frontal headache, pain in the loins, shivering and sweating. This illness was contracted in France. The onset of the attack was sudden, Nov. 24, 1917. Five definite waves of fever occurred between that date and December 21. Thereafter the temperature showed considerable daily variations, though only once reaching 101, Jan. 22, 1918, or on the sixtieth day of the disease. March 5, 1918, 102 days from the original onset the man appeared to be in good health. He was then scarified and inoculated with excreta from lice fed on many trench fever patients (Experiment 20).

March 14, after an incubation period of eight days, there was a sudden onset of fever with frontal headache, and pain in the right temporal region and in the loins. The right side of the face became swollen, owing to periostitis of dental origin. The following day the offending molar was extracted and the swelling quickly subsided.

With the fall of temperature on the third day there were sweating and polyuria, and all symptoms abated. On the sixth, seventh and eighth days an acute febrile relapse occurred, and the splenic area became tender, though the spleen could not be felt. On the twenty-eighth, twenty-ninth and thirtieth days a second febrile relapse followed, during which shin bone pain was complained of for the first time.

It would appear that in 102 days this man had made a complete recovery from his first attack of trench fever, and was, in consequence, susceptible to reinfection.

The second and third patients had contracted trench fever at our hands (Experiments 11 and 12), the disease having been produced by scarification with excreta from infected lice. They had reached the thirtieth and thirty-first days of disease, respectively.

Both men showed evidence of persistent infection. In one case, pains in the head and limbs were complained of; in the other, headaches. The spleen in the latter was palpable. Both men were scarified and inoculated with the excreta of lice known to be infected, in the manner which originally produced their disease.

Neither showed any symptoms as a result, though observed for another twenty-five days. They must therefore be considered to be immune to reinfection and also possibly to be still infected. We may suppose that such men are liable to relapse, in which case they may be considered as potential carriers of trench fever.

The fourth patient contracted trench fever in France, giving a history of one attack in October, 1917, and a second commencing in January, 1918. The second attack was acute and witnessed by ourselves. We regard it as a relapse of the original infection. There were three "spikes" of temperature with pains in the head, back and limbs, and in the bones, muscles and joints. The spleen became palpable and tender. On the sixty-second day of the second attack there was still some pain in the thighs and shins, particularly at night and after exercise. There had been no fever, other than a temperature of 99.2 one evening, for forty-six days. On this day 5 c.c. of whole blood, from an active case of trench fever, were injected into him intravenously.

The patient from whom the blood was obtained had reached the sixty-third day of his attack, his disease also having been contracted in France. The day previously his temperature had reached 104. When blood was withdrawn the temperature was falling, but the disease remained acute. There was pain in the legs and arms, and in the muscles, bones and joint cartilages, with marked hyperalgesia of the skin of the legs. The fingers and toes ached. The tibiae were tender as well as painful. The spleen was palpable but not tender, and there was headache and backache. Sweating had begun. These details are given, as no control injection was made with this blood. No change occurred in the patient who received the blood intravenously, and after thirty-one days he still complained of pains in his legs, and general debility. He would appear to be immune to reinfection for the present. Is he also a carrier and liable to relapse?

The fifth patient was admitted to Hampstead from France for a typical attack of trench fever, his symptoms being headache, dizziness, shin bone pain and tachycardia. His records showed that he had suffered from diarrhea, with blood and mucus in the stools, during the early days of the attack. The temperature records for the first nine days of disease were missing, but thereafter his chart showed seven typical spikes of fever on the tenth, fourteenth, seventeenth, twenty-second, twenty-ninth, thirty-fifth and forty-second days of disease.

On the ninety-eighth day of disease the patient was complaining of pain in the bones of his legs, with tenderness and of general weakness. There was evidence of disordered action of the heart, with a history of heart trouble resulting from rheumatism before infection with trench fever. During the previous sixty-nine days the temperature never exceeded 100, though it had been frequently above normal. On this day 5 cc. of venous blood were injected into him intravenously. This blood had been obtained from the volunteer infected in Experiment 33 by means of louse excreta heated to 56 C. The blood was proved to be infective by Experiment 36. The last was simply a control experiment, 5 c.c. of venous blood being injected intravenously. After six days' incubation, trench fever developed, the only sign of the disease, when the temperature was discovered to be raised, being slight lumbar pain.

This fifth patient has shown no signs of reinfection during a period of twenty-five days.

A FURTHER TEST

In connection with these tests for immunity may be described two experiments (7 and 19) performed on a volunteer.

The subject came to us, Feb. 2, 1918, and careful examination revealed him to be thoroughly fit. He gave a history of smallpox in youth and of having been lousy each year while hop-picking, but no history of any illness suggestive of trench fever. February 4, 5 c.c. of venous blood were withdrawn from the volunteer infected by intravenous blood inoculation in Experiment 3 whose temperature at the time was 100.4, this day being the third of his initial attack. The blood was drawn up into a syringe containing 3 c.c. of a 1.8 per cent. solution of sodium citrate. Half a minute later the total fluid contained in the syringe was injected deeply into the muscles of the right buttock. For thirty-eight days after this the man remained in good health.

Before this experiment could be accepted as evidence that trench fever cannot be passed through two successive generations by means of the syringe alone, it was necessary to infect the man in some other way. Experiment 19 was therefore performed.

March 13, 5 c.c. of venous blood were obtained from an active case of trench fever, the syringe into which it was drawn containing 1 c.c. of 1.8 per cent. sodium citrate solution, and the whole injected deeply into the right buttock as before. The patient from whom the blood was obtained had contracted his disease in France and had reached the fifty-first day of his illness. His temperature was 101.6 at the time, and he was complaining of aching pains in the back and legs, with painful shins. The spleen was both palpable and tender, and the skin was acting freely. He has since had acute febrile relapses on the fifty-eighth and sixty-seventh days of his disease.

Eight days after receiving the injection, the subject complained of slight tingling sensations in the back. The following day he was feeling generally unwell, and his right thigh ached while out walking before breakfast. That night he slept badly, owing to aching in both thighs. There was no shivering or frequency of micturition. In the morning he complained of feeling hot at intervals, and at 11 a. m. was noted to be sweating slightly. At this time two hourly observations of his temperature were being made and no fever could be detected. He complained however, of dull frontal and occipital headache with impaired vision, pain in both arms from shoulders to finger tips, and pain in both thighs from hips to knees. The thighs and gluteal muscles were tender on pressure, and the skin over these areas was exquisitely tender to touch. There was, however, no evidence of local inflammation at the site of injection. There was no backache at this time and no tenderness or enlargement of liver or spleen. All the joints were normal and the tongue clean.

By the next day there was a great decrease of all symptoms. On the fifteenth day after the injection he was up and in his usual good health.

On the nineteenth day he took to his bed again with frontal headache, pink eye, pain and tenderness in the lumbar muscles, and slight muscle pain and tenderness in both thighs. Tenderness was well marked in the splenic area, but the spleen could not be felt.

After forty-eight hours he was quite fit again and has remained so since. At no time throughout his illness was he detected to have a raised temperature.

This attack so strongly suggests trench fever that we are inclined to believe that it is an afebrile form of the disease. Lice were fed on the subject while his symptoms were acute, and excreta from them have produced a febrile illness in another man. The subject has proved himself to be refractory to infection and might at one time have been thought to be naturally immune. We may therefore say that one attack of trench fever confers immunity while symptoms of the disease persist, though we can say nothing further. From observation of our cases from abroad we are convinced that active febrile relapses may occur many months after the original infection. Second infection in such cases can be excluded, as the patients have been under our observation throughout the whole interval. Many of our patients give histories of two or more attacks of trench fever, but we are by no means convinced, as yet, that these are all reinfections, as it is not uncommon to find that since the first attack normal health has never been regained.

CLINICAL FEATURES OF EXPERIMENTAL INFECTIONS

A comparison of the clinical features of these experimental infections is of some interest. Of the seventeen attacks of trench fever produced by us, thirteen have shown a sudden and four a gradual onset—76.5 and 23.5 per cent., respectively. Eight men remain in hospital, and of these, three show evidence of developing the chronic form of trench fever. Six after discharge from hospital have returned to some form of useful work. One had symptoms of disordered action of the heart when he left us.

The two outstanding features are:

1. One sample of louse excreta in Experiments 10, 11, and 12 produced three different clinical attacks of trench fever. Two were sudden in onset and one gradual. One case showed splenic enlargement without pain, one splenic pain without enlargement, and one no splenic involvement. The last man had no pain in his limbs at any time. The other two had recurrent pains in the shin bones. One of these had a single wave of pyrexia; the other two had definite febrile relapses. The only features common to all three were an initial fever of roughly three days' duration with frontal headache and conjunctival congestion.

2. The blood from the patient without limb pains, just noted, when injected intravenously into another man, produced an attack of relapsing trench fever with marked shin bone pain.

The majority of the attacks can only be described as mild, the patients making an uninterrupted recovery in about three weeks. Such a course is that probably followed by the majority of natural infections in France and elsewhere, and the patients invalided to this country must be considered as only a small percentage of the whole.

SUMMARY OF EVIDENCE FROM EXPERIMENTAL WORK

1. The whole blood from febrile trench fever cases, up to the fifty-first day of disease, when injected intravenously, is capable of reproducing the disease. The incubation period in such infections varies greatly—from five to twenty days.

2. The virus as contained in the circulating blood is destroyed by the addition of distilled water in large quantities.

3. The bites alone of infective lice do not produce trench fever.

4. The excreta of infective lice when applied to a broken surface of skin do readily produce trench fever. The incubation period of such infections is remarkably constant, and averages eight days.

5. The excreta passed by lice fed on trench fever patients are not infective till the expiration of not less than seven days from the commencement of the feeding on trench fever blood, thus indicating a developmental cycle in the louse or a period during which the organism multiplies.

6. Once lice are infective they remain so till at least the twenty-third day from the date of their infection.

7. The virus of trench fever, as contained in infected louse excreta, is capable of withstanding drying at room temperature, exposure to sunlight, keeping for not less than sixteen days and heating to 56 C. for twenty minutes.

8. A temperature of 80 C. for ten minutes destroys the virus, which is therefore not a spore-bearing organism.

9. The bodies of infected lice when crushed on the broken skin are capable of producing trench fever. When lice become so infective remains to be determined.

10. Active trench fever blood equivalent to the content of eleven lice does not produce trench fever when rubbed into the broken skin.

11. Infection probably does not take place by the mouth or by inhalation.

12. The excreta of lice are not normally capable of producing trench fever.

13. Trench fever infected lice do not transmit the disease to their offspring.

14. Some attack of trench fever may be afebrile throughout.

15. The percentage of individuals naturally immune to trench fever is exceedingly small.

16. Old age is no bar to infection.

17. Such immunity as results from an attack of trench fever is not permanent and may persist only for so long as the individual shows evidence of the disease.

18. Even as late as the seventy-ninth day of disease a patient's blood may remain infective and be capable of infecting lice fed on such a patient while febrile.

19. The different varieties of trench fever result from differences in the persons infected rather than in the source of infection.

THE VOLUNTEERS

As our experiments have been but few, some of these findings may be modified by future work.

The men on whom these experiments have been performed were all volunteers for the purpose. They were in most cases beyond the age of military service, and in no instance had they been in France or subject to infection with trench fever in the usual way. They have been kept strictly apart from all trench fever patients while with us, having been housed in buildings at some distance from the hospital.

Every man was observed for some days before any experiment was performed on him. In addition to the ordinary physical examinations, with pulse and temperature records, polygraph tracings were made, also thorough laboratory examinations of blood, stools, urine and sputum, for the purpose of excluding all forms of dysentery and typhoid, Malta fever, tuberculosis and malaria.

These men all volunteered from patriotic motives and are deserving of the highest praise in consequence. We owe a deep debt of gratitude to them and to Dr. Wiggins of Greenwich, who brought us in touch with them. The expenses connected with this experimental work have been met entirely by the Lister Institute of Preventive Medicine.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

DEXTRI-MALTOSE NO. 2, MEAD'S.—A mixture containing approximately maltose, 53.1 per cent.; dextrin, 42.6 per cent., and moisture, 4.3 per cent.

Actions and Uses.—On the claim that maltose is more readily assimilable than other forms of sugar, Mead's dextri-maltose No. 2 is proposed for use in the diet of adult invalids. The nutritive value of 500 gm. of Mead's dextri-maltose No. 2 corresponds to approximately 1,960 calories. The same quantity of milk represents 360 calories.

Dosage.—Mead's dextri-maltose No. 2 may be used in amounts to meet the carbohydrate requirements of the invalid in place of other carbohydrates.

Manufactured by Mead Johnson and Co., Evansville, Ind. No U. S. patent or trademark.

DEXTRI-MALTOSE NO. 3, MEAD'S.—A mixture containing, approximately, maltose, 52 per cent.; dextrin, 41.7 per cent.; potassium carbonate, anhydrous, 2 per cent., and moisture, 4.3 per cent.

Actions and Uses.—On the claim that maltose is more readily assimilable than other forms of sugar, Mead's dextri-maltose No. 3 is proposed to supplement the carbohydrate of cow's milk. In the belief that an addition of potassium salts counteracts a tendency to constipation, it is said to be particularly adapted in the feeding of constipated infants. The nutritive value of 500 gm. of Mead's dextri-maltose No. 3 corresponds to approximately 1,920 calories. The same quantity of milk represents 360 calories.

Dosage.—Mead's dextri-maltose No. 3 may be used in amounts to meet the carbohydrate requirements of infants in place of other carbohydrates.

Manufactured by Mead Johnson and Co., Evansville, Ind. No U. S. patent or trademark.

Increase of Tuberculosis in France.—In order to check the appalling growth of tuberculosis in France, for which the war is largely responsible, the American Red Cross has undertaken widespread and thorough measures of relief. Since the French department of the interior assumes the care of tuberculous soldiers, the work of the Red Cross is confined to the refugees and repatriates who were caught in the German invasion of France and Belgium. Many of them were cared for in the tuberculosis barracks which had been provided in connection with the large hospitals and almshouses of Paris, where 1,052 beds were available. The Red Cross instituted many improvements in the barracks, increasing the nursing force, establishing diet kitchens and recreation rooms, providing additional clothing and bedding, and erecting new cure halls and dining rooms. Because of the fact that the wretched housing conditions under which many of the refugees were forced to live made them peculiarly susceptible to tuberculosis, a plan similar to the home hospital system prevalent in New York City has also been put into use. Small houses are now being constructed for families having one or more tuberculous members. Each house consists of two sleeping rooms and a living room, with a small porch for the patient, in order to minimize the danger of infection. The children are to be placed in open-air schools and to be given vocational training in such trades as gardening, tailoring and carpentry. The Red Cross is also planning to aid the American Army in France by caring for the soldiers who develop tuberculosis. For this purpose a hospital is to be erected near the shipping ports, where patients in need of attention before their return home will receive special treatment. The organization at present maintains and conducts four tuberculosis hospitals in France and, in addition, contributes funds and supplies to ninety-six French hospitals.

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SATURDAY, JULY 20, 1918

THE RACE FOR LIFE IN CHILDHOOD

When the announcement was made a few months ago by the Bureau of Child Hygiene of our largest American city that beween 12 and 15 per cent. of its schoolchildren are underfed, it was received with skepticism by some and with surprise by others. The statement appears even more disconcerting when it is expressed in the terms selected by an expert in the sociological conditions prevailing among the less well-to-do. Thus Manny[1] of the New York Association for Improving the Condition of the Poor frankly states, as the result of the studies made in New York, that at least one third of the schoolchildren are so much below normal standards of growth as to call for special nutritional care. Of this group, at least one third require medical treatment, while two thirds may be expected to respond to improved living conditions, especially as regards feeding. There are now in the public and parochial schools of New York City more than a million children. Of other children between 2 and 6—the "preschool" age—and between 6 and 16 but out of school and either at home or at work, there are nearly as many again. This, if the conditions found by our study are at all typical, means that at a moderate estimate there are more than half a million children in need of nutritional attention; more than half a million children requiring an additional investment on the part of society if they are to be placed on a plane of reasonable efficiency. These are not merely American problems. The chief medical officer of a large English Board of Education stated as recently as 1910 that defective nutrition stands in the forefront as the most important of all the physical defects from which schoolchildren suffer. Subsequently an English writer, C. J. Thomas,[2] estimated the amount of undernourishment in the English school population at between 10 and 15 per cent.

Statements like the foregoing may be made on the basis of a superficial observation of the appearance of children, who may be put into the category of underdevelopment because they "look delicate." Indefinite considerations of this sort are, of course, not without some value; but the modern sociological worker and physician are not content with such somewhat intangible criteria of nutrition. Hence has arisen the recent plan of accurate measurement of such phenomena and conditions as permit quantitative evaluation. Weight and height are carefully determined, the results being compared with statistical standards or averages for comparable ages or sizes.[3] The significance of the ratios thus obtained is further enhanced through a careful medical examination and gradation of the children by an experienced physician. The result has been the establishment of scales for grading nutrition in the adolescent; thus the Dunfermline scale takes account, among other things, of weight and height measurements, muscular development, the condition of the circulation, and other features, with a resultant classification into four grades.[4]

Thus far we have made the tacit assumption that the defects represented by the "delicate" child are remediable by nutritional and environmental changes. So far as backwardness and inferiority are the expression of hereditary "constitutions," the prospect of a remedy by hygienic devices is not promising. Experiences gathered during the past ten years seem to indicate quite clearly that many if not most of the deficiencies represented by physical inferiority in the great masses of children are not irremediable inheritances, but the outcome of inadequate opportunity to enjoy a proper dietary regimen and hygienic surroundings. Poor nutrition may be corrected; inherited defects of physique rarely are so readily corrected.

Among the newer methods of remedying the results of defective nutrition are the nutrition clinics and classes. For many of their features the "tuberculosis classes" have afforded a model. The details of the history of the class method need not be given here, though the pioneers in this work deserve prominent recognition for what they brought about. In 1908, Emerson[5] collected into a class a number of the weakest and most poorly nourished children from several thousands of patients coming to the children's department of the Boston Dispensary. The past record of the child, its physical condition, diet and home life, including the time spent in sleep, outdoors, etc., were carefully considered. A social visitor was sent to the home to ascertain further details. On the basis of all the data obtained in such ways, a talk was given to the class as a whole on Saturday mornings, explaining hygiene and diet and open air life. A few instructions in food values were issued. Bread and butter

1. Manny, F. A.: Defective Nutrition and the Standard of Living, Survey, March 20, 1918.
2. Thomas, C. J., in The Care of the School Child, Edited by James Kerr, London, 1916, p. 109.
3. Manny, F. A.: A Comparison of Three Methods of Determining Defective Nutrition, Arch. Pediat., 1918, **35**, 88.
4. Manny, F. A.: A Scale for Grading Nutrition, School and Society, Jan. 22, 1916.
5. Emerson, W. R. P.: The Hygienic and Dietetic Treatment of Delicate Children by the Class Method, Boston Med. and Surg. Jour., 1910, **163**, 326.

or cereal and milk were urged in place of tea and coffee. Other children and parents became sympathetic listeners; and at the weekly conferences the successes recorded, as well as the reasons for failures to gain, aroused not only respectful attention but active interest and wholesome speculation as to the outcome. The results were indisputable. If a child did not gain, a careful study of the case was made; the reason was usually found easily and the failure remedied. As Emerson has reported, the class method arouses a spirit of competition, the "game" in it, which has a powerful attraction to the child as an aid to its management. The evident measurable gains furnish a strong incentive alike to children and parents, making the necessary instruction to the latter easy and effective. The results obtained each week remove the prejudices and fears, and convince in a moment, as if by magic, where hours spent in argument fail.

This pioneer attempt has been duplicated on a much larger scale by Smith[6] in New York, in connection with Bellevue Hospital. Every child who has applied for admission to this class has been accepted if he has been 5 pounds or more underweight for his age. A parent or some adult member of the family has been expected to attend the class for the first few visits so that advice and instruction could be given to a responsible person. The general plan was to make a careful diagnosis, to correct remediable physical defects, to determine and correct any economic factors that had a bearing on the case, and to try to improve the hygiene and diet of the child by every means possible. It will repay workers for child welfare to study in the original the details of the plans pursued. When wasting diseases, such as diabetes, syphilis and nephritis, are ruled out, and when less conspicuous disease, such as tuberculosis, local foci of infection, such as the tonsils afford, enlarged adenoids, prematurity and hereditary defects are allowed for, there remains a possible sequence of malnutrition due to faulty hygiene and diet. In this connection it is possible to correct improper or insufficient food, irregular and other bad habits of eating, constipation, insufficient sleep, insufficient fresh air day and night, insufficient or perhaps excessive exercise, and uncleanliness of body and clothing.

What tangible good has actually been accomplished? The answer to this is the final test. By the use of class methods, Smith reports, it has been possible to make 57 per cent. of the children gain at 1.7 times the average rate for their ages, and 22 per cent. at about the average rate, or a total of 79 per cent. who have gained at or better than the average rate. Of the remaining 21 per cent., one or more reasons for the failure may be easily ascertained in every case. These results have been obtained under the most adverse circumstances. It seems fair to conclude that the class method is of value in the treatment of undernourished children, even when they must be handled in large numbers. The establishment of such classes in all outpatient departments, and perhaps in many of the schools, Smith adds, would be of great service to every community, not only by the good done the children treated, but also by the education of the public in matters of hygiene. Parents must be made to realize that a thin child is not a healthy child, and that he needs medical supervision.

6. Smith, C. H.: Methods Used in a Class for Undernourished Children, Am. Jour. Dis. Child., June, 1918, p. 373.

A BALANCED DIET

The expression "balanced ration" and the principles that it is intended to convey have been developed largely in the domain of animal feeding. To the animal husbandman the prevailing theory of a balanced ration has postulated that the requirements for the successful growth and reproduction of an animal have been met when the supply of digestible protein and available energy is adequate. A somewhat similar idea of "balancing the diet" by securing a suitable intake of protein and calories has become current in popular literature on human nutrition.[1] Even in the planning of individual meals, some consideration of the distribution and quantities of the familiar nutrients has been urged. Thus, in her book on feeding the family, Mrs. Rose[2] has written:

> To see that these three foodstuffs are represented in good proportions in each meal is what is usually meant by serving a "balanced" meal. We should go a step further and see that some foods furnishing iron, phosphorus, and calcium and some giving "ballast" in the form of cellulose are also included, and that the fuel value of the meal is approximately the same each day; or, in other words, that we do not have a feast and upset our digestions by overeating today, and have a famine tomorrow, but stoke the furnace regularly, according to its needs. Herein lies the advantage of knowing the relative fuel value of different foods and different dishes.

The science of nutrition has emerged from its simpler beginnings into a complex of problems of great intricacy. The theory that protein and energy are the only necessary factors to be considered in formulating a ration had to be abandoned. It is not intended to imply that these aspects are negligible or even not highly important. But, so far as they are essentially quantitative rather than also qualitative in their bearing, they are not infrequently liable to exhibit serious shortcomings. Not all proteins in foods are adequate for nutrition; but even if they were, the problem of the perfect ration would be far from solved. Physiologic well-being demands a multiplicity of contributory dietary essentials.

A recent contribution from the Wisconsin Agricultural Experiment Station[3] at Madison brings a new

1. Fisher, Irving, and Fisk, E. L.: How to Live, 1915, p. 171.
2. Rose, Mary Swartz: Feeding the Family, New York, 1916, p. 202.
3. Hart, E. B.; Steenbock, H., and Humphrey, G. C.: New Facts on Feeding Cattle for Successful Growth and Reproduction, Bull. 287, Wisconsin Agric. Exper. Station, 1918.

formulation of older experiments from this institution demonstrating that balanced rations, in the long accepted interpretation of the term, are sometimes deficient in components that make for the best growth of the animals. Several years ago the station began a series of observations with cattle on the effect of "balanced" rations on growth and reproduction. The rations were, however, restricted in their makeup to a number of plants to test the adequacy of the prevailing theory that protein and energy are the only necessary factors to consider in formulating a ration. Each ration was balanced — that is, so made up as to contain the foodstuffs in sufficient amounts and suitable proportions to supply adequate energy and adequate digestible protein — but in one case it was made up entirely of feeds obtained from the corn plant, in another from the wheat plant, in a third from the oat plant, and in a fourth from a mixture of the three. The outcome was somewhat surprising from the standpoint of the older physiologic conceptions. It was found that for cattle a complete ration can be made from the corn plant. It will permit normal growth and reproduction. The same satisfactory result cannot be obtained, however, with the products of the oat plant. Furthermore, an exclusive ration of wheat grain and wheat straw, even though abundant in calories and rich in digestible protein, is in most cases fatal to both growth and reproduction. It will also produce weak or dead calves. So far as reproduction is concerned, the same statement is true with a corn grain and wheat straw ration.

What is the meaning of this unexpected unlikeness in seemingly similar rations? In some cases a supplement of suitable salts remedies most of the defect and thus indicates wherein the shortcoming lies. This is true of the wheat plant. Another occasional deficiency is found in a lack of sufficient vitamins, those as yet unidentified chemical food substances that are needed for growth and reproduction. A further danger, little likely to play a part in human nutrition, is the alleged toxicity of certain plant parts when they are used in too large abundance in the ration. Thus the Wisconsin experimenters believe that in the wheat experiments cited the essential disturbing factor is a toxic substance that interferes with the utilization of materials necessary for the normal development of the nervous system of the animal, or acts on the nerves directly. It is possible, of course, that it may induce degeneration of the nerve tissue of young or mature animals. This would account for the blindness observed in the heifers and also for the failure of muscular coordination apparent in the new-born calves of wheat-fed mothers. The defects are not seen when certain foods supplement the wheat. We have here the suggestion that certain natural foods may act as correctives to others.

The lesson from these carefully planned experiments is not an indictment against any familiar cereal, any more than the occurrence of beriberi is an indictment against the use of rice. It merely emphasizes anew what has often been set forth of late in these columns, namely, that a factor of safety lies in a wide variety of diet whenever this is possible. There should be a sufficient excess of the recognized essentials to provide a safe margin of them, so long as their quantitative relations are not established. The necessity, Hart, Steenbock and Humphrey remind us, of considering such factors as toxicity, suitable proteins, growth-promoting substances or vitamins, and a proper balance of salts, indicates how complex the problem of nutrition really is and how necessary it is that the relative importance of the factors be clearly exposed in order that we may place the various feeds in their proper category. Much of this comment can profitably be translated into the problems of human nutrition, even if the details concerned in animal husbandry have no immediate bearing.

THE NEW GENUS OF SPIROCHETE—LEPTOSPIRA

Only a few years have elapsed since the word "spirochete" was practically unknown in medical circles, or suggested few associations with the genesis of disease. The description of spirochetes and the invention of the name date back to the days of Ehrenberg, 1838. Schaudinn's classic studies on what is now termed *Spirochaeta pallida* and its relation to a worldwide malady gave a new impetus to interest in this field of microbiology. Recently the identification of a spirochete as the cause of infectious jaundice[1] has served to reduplicate the efforts to learn the details and distinctions that lend accuracy to bacteriologic diagnosis. The establishment of a new genus of spirochetes, as has recently been proposed for *Leptospira* by Noguchi,[2] marks an important event.

The type organism that led to the assignment of this independent generic name to a group of spirochetes was the causative agent of infectious jaundice described as *Spirochaeta icterohaemorrhagiae* by Inada and his associates in 1914, and found to be identical with the strain isolated in cases of infectious jaundice among British soldiers in Flanders. It thus becomes one of at least six large genera of spiral micro-organisms, the *Leptospira* being characterized in distinction from *Spirochaeta, Saprospira, Cristispira, Spironema* and *Treponema* by peculiar minute elementary spirals running throughout the body, by the absence of flagella, and by the remarkable flexibility of the terminal portion of the organism. No differential features have been discovered among the strains of *Leptospira icterohaemorrhagiae* derived from American, Asiatic and European sources.[3]

1. Some Lessons from Trench Jaundice, editorial, THE JOURNAL A. M. A., June 1, 1918, p. 1602.
2. Noguchi, Hideyo: Jour. Exper. Med., 1917, **25**, 755.
3. Noguchi, Hideyo: Morphological Characteristics and Nomenclature of Leptospira (Spirochaeta) Icterohaemorrhagiae (Inada and Ido), Jour. Exper. Med., 1918, **27**, 575.

Thanks to the painstaking investigations of Noguchi[4] at the Rockefeller Institute for Medical Research, further advances have been made toward ascertaining the mode of survival and transmission of these organisms in nature. They are unable to grow in normal urine, the acidity of this secretion being detrimental to them. Under natural conditions *Leptospira icterohaemorrhagiae* cast off in the feces cannot survive longer than one day. Neither polluted water, sewage nor soil will serve to keep the organisms alive for more than a very few days; in fact, most of the aerobic bacteria found in these mediums inhibit the growth of the spirochetes. *Leptospira* is highly sensitive to the destructive action of bile. Noguchi has found that the larvae and adults of the *Culex* mosquito, the larvae of the housefly and bluebottle fly, wood ticks and leeches cannot play the part of an intermediate host to the organism of infectious jaundice.

The discovery of the *Leptospira* in the urine of convalescents from infectious jaundice, among other related facts, has made it imperative to learn accurately what varieties of spirochetal organisms may normally find their way into the urine. One thinks quite naturally of the inhabitants of the genitalia. Noguchi[5] believes, as the result of extensive observations on men, that *Spironema refringens, Treponema calligyrum* and *Treponema minutum* represent practically all the spirochetal forms observed in the male smegma flora. A leptospira has never conclusively been shown to be present in specimens of normal urine or smegma. This fact, if further established, will facilitate diagnosis when foreign forms are observed.

4. Noguchi, Hideyo: The Survival of Leptospira (Spirochaeta) Icterohaemorrhagiae in Nature: Observations Concerning Microchemical Reactions and Intermediate Hosts, Jour. Exper. Med., 1918, **27**, 609.
5. Noguchi, Hideyo: The Spirochetal Flor. of the Normal Male Genitalia, Jour. Exper. Med., 1918, **27**, 667.

Current Comment

OASES IN THE NATIONAL DESERT

Present indications are that Congress will pass legislation that will make the nation "dry." One point that does not seem to have occurred to our statesmen at Washington, in their admirable attempts to conserve the nation's resources, is the monstrous waste going on through the sale of highly alcoholized "patent medicines." There are on the market today a number of "patent medicines" containing from 15 to 25 per cent. of alcohol whose combined sales could only be expressed in millions of gallons. None of these products is admittedly sold for its alcohol content, and in most instances the manufacturers expressly deny that the alcohol is present for its drug effect. It is present as a "solvent," or is a "preservative" or "to prevent freezing"—anything but for its physiologic action. As an evidence of its marvelously potent medicinal qualities the manufacturer of one especially widely advertised product of this type has pointed to the number of carloads of his preparation that have been shipped into certain specific territories. Every pharmacist and every physician knows that the alleged medicinal virtues of these nostrums could, after their "extraction" by alcohol, be put up in solid form and the alcohol saved. Every retail druggist knows, however, that the vast majority of these preparations, were they put up in such form, would lose their power as "repeaters" and could be kept alive only by tremendously expensive advertising campaigns. The point of the whole question is that the impending legislation by Congress, while it will prohibit the manufacture and sale of alcoholic beverages, will not prevent the use of alcohol as a beverage, so long as nostrums whose most potent drug is alcohol are permitted to be sold unrestrictedly. As a prohibition measure the law may be a complete success; as a conservation measure it will leave much to be desired.

COCCIDIAL INFECTION IN MAN

Although coccidial infections in animals have been known for some time, little emphasis has ever been placed on the possible significance of a similar parasitic invasion of mankind. Latterly the publication of reports from various localities regarding the probable existence of human coccidiosis cannot fail to focus attention on the subject. The coccidia are a group of sporozoa which, during their trophic phases, are typically parasites of epithelial cells. The intracellular parasites have an asexual cycle within these cells in which reproduction is described to take place "by the process known as schizogony, and a succeeding sexual process involving the union of sexually differentiated gametes and spore formation within a cyst." Infection takes place through the ingestion of matter contaminated with the spores of the parasites, as happens in other instances of intestinal parasitism. The sporozoites are liberated from the sporocysts by the action of the digestive juices in the alimentary tract. Thereupon the sporozoites penetrate the membranes of the epithelium and come to rest in the cytoplasm of the cells, where they proceed to feed. Haughwout,[1] of the Department of Medical Zoology at the University of the Philippines, has thought it worth while to warn against the possible menace of coccidia. Several species of them have been found to infest the domestic and laboratory animals. Where hygienic conditions are not all that could be desired, it will thus be easy for infection to occur in man. The fear of this danger seems to be justified if we may trust new reports cited by Haughwout. They include what purport to be thirty-four well authenticated cases of human coccidiosis of recent occurrence. To this may be added the allegation of Castellani[2] that coccidiosis is comparatively common in the Balkans, numerous cases having been seen in the hospitals at Saloniki and in Macedonia, where conditions for transmission are doubtless highly

1. Haughwout, F. G.: Infections with Coccidium and Isospora in Animals in the Philippine Islands and Their Possible Clinical Significance, Philippine Jour. Sc. (B), 1918, **13**, 79.
2. Castellani: Jour. Trop. Med. and Hyg., 1917, **20**, 202.

favorable at the present period. Details of the various phases of the life cycle of these human protozoon parasites remain to be furnished by the pathologist and protozoologist. Haughwout states that the main thing the observer must be on his guard against is confusion of the cysts of helminths, particularly the eggs of trematodes and of hookworms, with coccidial cysts, and vice versa. From the few instances observed, it seems unlikely that ipecac and emetin compounds, on which reliance has been placed in infections with *Endameba histolytica*, will prove of any therapeutic value. In some cases at least the parasites seem to disappear from the stools without special treatment. Lime is said to exert the most destructive action on the cysts of any of the commonly used disinfectants. There is enough uncertainty in all these meager data to stimulate suitably situated investigators to a study of the diagnosis, treatment and prophylactic hygiene of an uncertain menace to human health.

EFFECT OF THE WAR ON FOREIGN MEDICAL JOURNALS

We have heretofore noted the effect of the war on our foreign exchanges, especially in the curtailment of space devoted to reading matter. We have also referred to the fact that the Italian journals were coming minus their advertising pages; those Italian journals which carried advertising matter on their covers are now omitting the covers. Our French exchanges received this week, however, are startling in their appearance. It seems that the French government has ordered that no advertising shall appear in any periodical to be sent out of the country. The *Nourrisson* and the *Paris médical* comply with the order by entirely blotting out all their advertising, so that the space hitherto devoted to advertising is simply stippled black. The *Presse médicale* complies with the order by leaving the space blank. As a result of this, the *Presse médicale* for June 20 carried nine and one-half pages of reading matter, and five and one-half pages blank. The object of the order is not stated. It certainly is not to save paper, or these French journals, while complying with the letter, would be violating the spirit of the order. It has been suggested that advertising space has been bought and used by the enemy for code messages.

BERIBERI AND CARBOHYDRATES

The demonstration of the particular physiologic significance of those properties of foods to which the word "vitamin" has been assigned has naturally led to several hypotheses regarding their rôle. Soon after the word "vitamin" was coined, it became something to conjure with. Some of the phenomena for which it was made responsible were little more than figments of the imagination. Others were established on a more probable basis of experimental observation. Among the views thus propounded was the thesis that a vitamin plays an active part in the metabolism of carbohydrates. It was based on the supposedly substantial observations of Braddon and Cooper[1] and of Funk[2] which they thought demonstrated that when birds were fed on polished rice or starch, with or without a fixed amount of antineuritic vitamin, the greater the proportion of carbohydrate in the food, the quicker was the onset of polyneuritis. Vedder[3] has clearly pointed out, in relation to a specific instance, how important it is from a practical as well as a purely scientific standpoint to ascertain the precise relation of the vitamins to metabolism. The dietotherapeutist engaged in the treatment or prevention of beriberi needs dependable information regarding the quantity of vitamin-yielding material to be supplied. Obviously, if the requisite proportion depends on the character of the diet and other incidental metabolic factors, a variable difficult to reckon with is thereby introduced. The latest experiments carried out by Vedder indicate that the antineuritic vitamin is not concerned in carbohydrate metabolism. Accordingly, in prescribing a diet to prevent beriberi, Vedder believes that it is sufficient to insure the consumption of such quantities of antineuritic foods—beans, rice polishings, barley, etc.—as experience has indicated will prevent the disease, without any reference to variations in the amount of carbohydrate consumed.

BASAL METABOLISM

The study of what is called the "basal metabolism" of persons under various conditions of age and in relation to different diseases has received considerable attention in recent years. The basal metabolism or, more strictly, the basal catabolism, is the exchange of matter that proceeds in the organism in a state of complete muscular rest and while the processes of digestion and absorption from the alimentary tract are completely suspended. Why this aspect of the energy transformations of the body should be important becomes clearer when one realizes that it represents the minimum of energy compatible with cell life under normal conditions. In a sense, it becomes an expression of the minimum food requirement of the organism; a surplus above this minimum may be utilized for muscular activity or give rise to a storage of matter and energy. As a unit for measuring the metabolism, the square meter of body surface, a dimension that can readily be calculated, is taken since it has been demonstrated that the heat output is essentially proportional to the superficial area of the individual. It has been shown in numerous experiments that the unit of surface area eliminates the same amount of heat in the normal adult, within 10 per cent. of a determined average. Armsby, Fries and Braman[4] of the Institute of Animal Nutrition at the Pennsylvania State College, who have recently calculated the mean daily basal metabolism per square

1. Braddon and Cooper: The Influence of the Metabolic Factors in Beriberi, Part I, The Effect of Increasing the Carbohydrate Ration on the Development of Polyneuritis in Birds Fed on Polished Rice, Jour. Hyg., 1914, **14**, 331.
2. Funk, Casimir: Die Rolle der Vitamine beim Kohlenhydratstoffwechsel, Ztschr. f. physiol. Chem., 1914, **89**, 378.
3. Vedder, E. B.: Is the Neuritis-Preventing Vitamine Concerned in Carbohydrate Metabolism? Jour. Hyg., 1918, **17**, 1.
4. Armsby, H. P.; Fries, J. A., and Braman, W. W.: Basal Katabolism of Cattle and Other Species, Jour. Agricultural Research, 1918, **13**, 43.

meter of body surface, find that it appears not to differ greatly in man, cattle, swine and horses under comparable conditions. This surprising uniformity argues for the similarity of the fundamental metabolic processes in the higher animals. The unlike conditions of muscular activity and digestive performance introduce variable factors that make the total metabolism of the different species less easily compared under the conditions of ordinary active life.

Medical Mobilization and the War

Uniform for Contract Surgeons

A new uniform for contract surgeons will be the same as that worn by commissioned officers, excepting that there will be no shoulder device, and the insignia to be worn on the collar will be the caduceus with the letters "CS" superimposed.

Increase in the Navy

On account of the increase of the strength of the Navy to 131,485 the Naval Medical Corps will be allowed two additional medical directors with the rank of captain and forty additional medical inspectors with the rank of commander. This will increase the allowance of officers of the Navy from 843 to 1,120.

Hospital in England for American Nurses

The War Council of the American Red Cross has appropriated $54,855 for the leasing, equipment and maintenance of a Red Cross hospital for American nurses in Great Britain on leave from France. The hospital will have a capacity of about fifty-five beds.

Army Surgeons to Meet

The Association of Military Surgeons of the United States will hold its annual meeting for 1918 at Camp Greenleaf, Fort Oglethorpe, Ga., October 13 and 15, under the presidency of Med. Dir. George A. Lung, U. S. Navy.

American Military Hospital Started

Work was commenced, June 27, on a large American military hospital near Salisbury, England, the site being a country estate of 200 acres purchased by the Red Cross. The contracts provide that the hospital shall be ready in six weeks with accommodations for 400 patients, but it is planned that the institution will eventually accommodate 3,000 patients.

Care of American Wounded

Almost the last of the American wounded of the recent German offensive who are to be moved from base hospitals in Paris to United States or to other hospitals in France for further treatment during convalescence left Paris, June 27, on an American hospital train. There are at present sixteen of these trains in service on the western front, each of which consists of sixteen large cars, built according to specifications drawn by Col. Percy L. Jones, M. C., U. S. Army, head of the American Ambulance Service. Each train has a maximum emergency capacity of 641 wounded, or of 340 if all are lying cases.

Another Base Hospital Publication

THE JOURNAL has just received number 7 of volume 1 of a publication issued by the base hospital at Camp Greene, N. C. It is entitled *The Caduceus* and is dedicated to the cause of world-wide justice. It is published every Saturday by the enlisted personnel of the base hospital, costing 5 cents per copy. The present issue contains eighteen pages, well illustrated. Such a publication is invaluable for its effect on the morale of the organization and for preservation as a permanent stimulus to memory of great periods in the lives of the men issuing it.

Budget Submitted

The American Red Cross Commission to Great Britain submitted a budget of its expenditures, from April 30 to June 30, amounting to $974,630.25. The largest single items were one of $238,500 for a hospital at an English port with an immediate capacity of 200 beds, and one of $100,700 for the purpose of establishing emergency depots in Ireland to meet relief needs in the case of disaster similar to the sinking of the *Tuscania*. Other items of importance are $109,710 for a line of communication camps covering the care of United States troops, $95,411 for rest camps and a hospital for American troops passing through England, $52,470 for convalescent homes for officers, with a capacity of 100 beds, and $47,700 for the installation and maintenance of a naval hospital for officers and men in London, with a capacity of fifty beds.

"Carry On"

The first number of *Carry On*—"a Magazine on the Reconstruction of Disabled Soldiers and Sailors"—is a well printed, well illustrated magazine of thirty-two pages. All of the signed articles are by nonmedical men and women, and are mainly devoted to telling what the disabled soldier and sailor—whether the disability is the loss of sight, limb or what not—may be able to do in spite of his condition. These articles give the optimistic side of what the future holds in store for the disabled, and what has been and is being done to make this optimism well founded. The illustrations show what has already been accomplished in making the disabled warriors of use in the world. The object of the Surgeon-General in publishing this magazine evidently is to awaken interest in the plans that are being outlined looking to the care of these men. Undoubtedly future numbers of the magazine will outline this work, and thus secure the interest, support and sympathy of the public in it. The magazine is circulated free, but the circulation will be confined to those who are sufficiently interested to write specifically and ask that they be put on the subscription list. Such requests should be addressed to "The Editor, *Carry On*, Surgeon-General's Office, U. S. Army, Washington, D. C."

Personnel of the Medical Department

For the week ending July 12, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 877, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors and 403 lieutenants.

MEDICAL RESERVE CORPS: 21,370, including 1,481 majors, 6,102 captains and 13,787 lieutenants. On active duty: 19,489, including 1,403 majors, 5,598 captains and 12,488 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,195, including 22 lieutenant-colonels, 264 majors, 255 captains and 654 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 354, including 6 brigadier-generals, 85 colonels, 254 lieutenant-colonels, 8 majors and 1 captain.

THE DISCHARGES to date are:

Causes	Number		
	M.C.N.A.	M.R.C.	M.C.N.G.
Physical disability	0	718	54
Inaptitude	0	274	21
Other branches of service	2	584	72
Resignations	0	182	34
Domestic troubles	0	60	0
Needed by community	1	50	0
Deaths	1	91	6
Dismissals	0	14	0
Duty completed	0	1	0
No reasons given	0	14	0
	4	1,988	190

Increased Rank for Medical Officers

The "rider" on the appropriation bill as finally passed states:

"*Increase in Medical Department:* That the Medical Department of the Regular Army be, and is hereby, increased by one assistant surgeon general, for service abroad during the present war, who shall have the rank of major general, and two assistant surgeon generals, who shall have the rank of brigadier general all of whom shall be appointed from the Medical Corps of the Regular Army.

"That the President may nominate and appoint in the Medical Department of the National Army, by and with the advice and consent of the Senate, from the Medical Reserve Corps of the Regular Army not to exceed two major generals and four brigadier generals.

"That the commissioned officers of the Medical Corps of the Regular Army, none of whom shall have rank above that of colonel, shall be proportionately distributed in the several grades as now provided by law.

"That the commissioned officers of the Medical Reserve Corps of the Regular Army, none of whom shall have rank above that of colonel, shall be proportionately distributed in the several grades as now provided by law for the Medical Corps of the Regular Army: Provided, That nothing in this act shall be held or construed so as to discharge any officer of the Regular Army or deprive him of a commission which he now holds therein."

COMMISSIONS ACCEPTED, MEDICAL RESERVE CORPS, U. S. ARMY

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F. L. Conwell, Tarentum
R. D. Hostetter, York

RHODE ISLAND

G. Houston, Crompton
V. E. Bablington, Edgewood
C. J. C. Gillon, Newport
W. P. Buffum, Providence
L. S. Gilpatrick, Providence
F. V. Hussey, Providence
F. H. Mathews, Providence
J. H. Morrissey, Providence

SOUTH CAROLINA

G. E. Rice, Belton
M. W. Beach, Charleston
J. B. Latimer, Charleston
A. F. Mahoney, Clio
R. H. Dubose, Darlington
L. W. Anderson, Donora
E. P. Pendergrass, Florence
S. J. Blackman, Kershaw
B. R. Johnston, Luray

SOUTH DAKOTA

T. S. Johnson, Cheyenne Agency

TENNESSEE

C. H. Sanford, Dyer
E. Lewis, Memphis
J. J. McCaughan, Memphis
N. B. Norris, Memphis
H. E. Friedman, Nashville
H. L. Klein, Nashville

TEXAS

O. Davis, Anderson
H. L. Farmer, Comanche
M. L. Stubblefield, Carbon
L. T. Miller, Dallas
A. M. Kahn, Denison
J. J. Horton, Grand Prairie
R. L. McLaughlin, Granger
W. S. Barcus, Hillsboro
G. C. Lechenger, Houston
W. C. Lyon, Houston
L. McK. Smith, Martin
H. T. Hayes, Midway
S. F. Harrington, Plano
W. J. Shuddemagen, Sabinal
R. B. Anderson, Sequin
W. S. Bunkley, Stamford
I. Pope, Jr., Tyler
L. J. Boyd, Winnsboro

UTAH

T. G. Odell, Lark

VERMONT

B. F. Andrews, Burlington
H. H. Leffler, Burlington
F. P. Dinwell, East Calais
A. E. Perley, Richford
F. H. Gebhardt, Rutland

VIRGINIA

J. F. Terrell, Ashland
M. W. Baker, Charlottesville
W. W. Rixey, Charlottesville
J. C. Bradley, City Point
F. H. Lee, City Point
E. L. Griffith, Clifton Forge
F. P. Gardner, Covington
H. B. Burns, Dallas Center
G. H. Snead, Fork Union
J. D. Clements, Gloucester
R. B. Blackwell, Hopewell
E. W. Buckingham, Lynchburg
G. B. Dudley, Martinsville
R. W. Lewis, Norfolk
W. F. Crouse, Portsmouth
C. D. Allen, Richmond
C. H. Fowlkes, Richmond
F. S. Johns, Richmond
H. R. Phinney, Jr., Richmond
W. A. Simpson, Richmond
W. W. S. Butler, Roanoke
L. H. Justis, Roanoke
T. E. Armstrong, South Boston
W. L. Drewry, Wakefield

WASHINGTON

J. M. Lea, Biglake
T. B. N. Murphy, Oakesdale
F. J. Clancy, Seattle
J. S. McBride, Seattle
R. J. McCurdy, Seattle
H. C. Blair, Tacoma

WEST VIRGINIA

J. A. Saunders, Alpoca
W. H. Greene, Camden
C. F. McCuskey, McMechen
S. A. Hardman, Weston

WISCONSIN

R. J. Leutsker, Antigo
L. T. McNicholas, Athens
I. D. Tiedemann, Desota
E. C. McGill, Madison
J. A. Opstedal, Madison
E. D. Angell, Milwaukee
A. H. Frankel, Milwaukee
G. H. Larson, Pewaukee
C. N. Colbert, Racine
T. C. Hemmingsen, Racine
C. O. Rogne, Sawyer

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Beauregard, Alexandria, La., base hospital, from the Surgeon-General's Office, Major EDGAR E. HUME.

To Camp Shelby, Hattiesburg, Miss., as assistant to camp surgeon, from Camp Zachary Taylor, Major HARRY L. ARNOLD. For duty, from New Orleans, Capts. DAVID L. HILL, DON C. McCLELLAND, OTIS McQUOWN, Lieuts. FRED B. HICKSON, DORSEY M. HINES, RODNEY E. TROUTMAN, ALLEN H. WALKER, ADRIAL C. WEAKLEY.

To Camp Travis, Fort Sam Houston, Texas, as assistant to camp surgeon, from Southern Department, Lieut. ABRAM L. VAN METER.

To Fort Thomas, and *Camp Zachary Taylor*, Louisville, Ky., *Camp Wadsworth*, Spartanburg, S. C., and *Camp Greene*, Charlotte, N. C., for conference, and on completion *to his proper station*, Lieut.-Col. MAJOR G. SEELIG.

To Hoboken, N. J., for duty, from Camp Greene, Lieut.-Col. WILLIAM L. SHEEP.

To Philadelphia, Pa., and *New York City*, for duty, and on completion *to his proper station*, Lieut.-Col. WILLIAM L. HART.

To Rochester, Minn., Mayo Clinic, as instructor, from Washington, Col. WILLIAM J. MAYO.

Resignation of Lieut. FLOYD A. THOMAS accepted.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Beauregard, Alexandria, La., base hospital, Capt. EDWIN V. CALDWELL, Huntsville.

To Camp Dix, Wrightstown, N. J., for duty, from New Orleans, Lieut. SOLON W. WRIGHT, Bessemer.

To Camp Wheeler, Macon, Ga., base hospital, Capt. ENOCH M. MASON, Birmingham.

To Fort Oglethorpe for instruction, Capt. WALTER A. GRESHAM, Russellville.

Arkansas

To Camp Dix, Wrightstown, N. J., for duty, from Fort Riley, Lieut. FELTON W. LANDRUM, Dugga.

To Camp Dodge, Des Moines, Iowa, for duty, from Camp Beauregard, Major LOYD THOMPSON, Hot Springs.

To Fort Oglethorpe for instruction, Lieut. WALTER K. GRAY, Little Rock.

California

To Camp Dix, Wrightstown, N. J., for duty, from Fort Riley, Lieut. ERNEST C. GRINER, San Francisco.

To Camp Dodge, Des Moines, Iowa, base hospital, from New York City, Lieut. ROBERT A. POWERS, San Francisco.

To Camp Lewis, American Lake, Wash., for duty, Capt. ALEXANDER H. McLEISH, Stockton; Lieuts. THEODORE C. SHNEERER, Los Angeles; FRANK C. PEIRSOL, Mendocino City; JOSEPH A. THIBODEAU, ROBERT W. WILCOX, San Francisco.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Custer, Major PERCIVAL G. WHITE, Los Angeles.

To report by wire to the commanding general, Western Department, for assignment to duty, Capt. EDWARD W. TWICHELL, Sacramento.

To San Francisco, Cal., Letterman General Hospital, for temporary duty, Capt. THOMAS C. BURGER, San Diego.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. BRUCE McV. MAKCALL, San Francisco.

Colorado

To Camp Crane, Allentown, Pa., base hospital, Lieut. ROSS W. JOHNSON, Denver; from Camp Kearney, Capt. LEWIS M. VAN METER, Denver.

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieuts. JULIAN C. KENNEDY, GEORGE B. LEWIS, Denver.

Connecticut

To Camp Custer, Battle Creek, Mich., base hospital, Capt. ALBERT E. AUSTIN, Sound Beach.

Resignation of Capt. CARL W. HENSE, New Haven, accepted.

District of Columbia

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, from the Surgeon-General's Office, Major WILLIAM G. ERVING, Washington.

Florida

To Fort Oglethorpe for instruction, Lieut. FREDERICK J. AUWERS, Oakland.

Georgia

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. CHARLES M. MASHBURN, Atlanta.

To Fort Oglethorpe for instruction, Lieuts. LEROY C. PARHAM, Chipley; MARCUS L. HICKSON, Fort Valley.

Idaho

To Fort Oglethorpe for instruction, Capt. FRANCIS L. QUIGLEY, Wallace.

To Fort Riley for duty, from Prairie View, Texas, Lieut. VONANDO G. LOGAN, Rockland.

Illinois

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. DONET F. MONACO, Chicago.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Riley, Lieuts. FRANK DEASON, Rush; ANTHONY B. ZWASKA, Rockton; CHRISTOPHER B. STUART, Springfield; from New Orleans, Lieut. JOHN W. McGUIRE, Chicago.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. MAYER S. COFFLER, Chicago.

To Camp Grant, Rockford, Ill., base hospital, Lieut. LEONARD J. MURPHY, Fairland.

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieut. ADOLPH D. TOLLEFSEN, Chicago.

To Camp McClellan, Anniston, Ala., base hospital, Capt. LEON M. BOWES, Norwood Park; Lieuts. ALBERT H. CARTER, Chicago; JESSE A. DE FREITAS, Springfield.

To Camp Meade, Admiral, Md., base hospital, from Camp Beauregard, Major THOMAS A. WOODRUFF, Chicago.

To Camp Pike, Little Rock, Ark., base hospital, Lieut. JOSEPH L. NORTELL, Chicago.

To Camp Sheridan, Montgomery, Ala., base hospital, Lieut. ALVIN THOMPSON, Chicago.

To Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. WILLIAM A. O'CONNOR, Chicago.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Lieut. NORMAN C. WADDELL, Cooks Mills.

To Chicago, Ill., for instruction, Lieut. JOHN MITCHELL, Chicago.

To Fort Des Moines, Iowa, base hospital, Capt. RUFUS W. BISHOP, Chicago.

To Fort Logan H. Roots, Ark., base hospital, Lieut. HARRY A. SULLIVAN, Rockford.

To Fort Oglethorpe for instruction, Capt. WILLIAM E. SHACKLETON, Lieuts. CLARENCE R. CHOUINARD, ALBERT G. GRAN, Chicago.

To Fort Snelling, Minn., for duty, from Camp Grant, Capt. LOUIS J. PRITZKER, Chicago.

To Fort Worth, Texas, Signal Corps Aviation School, from Camp Sevier, Major ARTHUR F. STOTTS, Galesburg.

To report by wire to the commanding general, Central Department, for assignment to duty, Lieut. JOHN R. BRYAN, West Point.

To Washington, D. C., for duty in the Surgeon-General's Office, from Camp Dodge, Capt. WILLIAM K. MURRAY, Chicago.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. EDWARD T. ROBINSON, Chicago.

Resignation of Lieuts. THOMAS P. RANNEY, Chicago, and JOHN E. BURNS, New Dennison, accepted.

The following order has been revoked: *To Camp Pike*, Little Rock, Ark., for duty, Lieut. EDWARD H. WARZEWSKI, Chicago.

Indiana

To Camp Custer, Battle Creek, Mich., base hospital, Capt. WILLIAM J. NORTON, Hope.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. REUBEN A. SOLOMON, Indianapolis.

To Camp Hancock, Augusta, Ga., for duty, Lieuts. ARTHUR L. OILAR, Russiaville; LEONARD P. COLLINS, Winamac.

To Camp MacArthur, Waco, Texas, for duty, from Camp Travis, Capt. ETHAN A. ISH, Waterloo.

To Camp Wadsworth, Spartanburg, S. C., base hospital, Capt. EDWIN R. CHURCHELL, Richmond.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Capt. LINLEY M. REAGAN, Tipton.

To Fort Oglethorpe for instruction, Capt. WILLIAM E. NICHOLS, Hammond; Lieuts. FRED H. FINLAW, Arlington; FRANCIS M. DICKASON, Bluffton; BYRON J. WYLAND, Mishawaka.

To Fort Sam Houston, Texas, base hospital, Capt. HARRY ELLIOTT, Brazil.

To Washington, D. C., for duty, Lieut. WILLIAM A. HOLLIS, Hartford City.

Iowa

To Allesandro, Calif., as flight surgeon, from Mineola, Capt. MURDOCH BANNISTER, Ottumwa.

To Camp Dodge, Des Moines, Iowa, base hospital, Capt. ALBERT H. MYERDICK, Mt. Pleasant; Lieuts. ALBERT A. SCHULTZ, Fort Dodge; AUSTIN C. DAVIS, Iowa City; GUY A. LOTT, St. Ansgar.

To Camp Lewis, American Lake, Wash., base hospital, Lieut. LORAN M. MARIN, Fort Dodge.

To Camp McClellan, Anniston, Ala., base hospital, Lieut. CHARLES W. TIDBALL, Independence.

To Camp Shelby, Hattiesburg, Miss., base hospital, Capt. WILLIAM C. NEWELL, Ottumwa.

To Camp Travis, Fort Sam Houston, Texas, base hospital, Lieut. CHARLES D. MARTIN, Davenport.

To Fort Oglethorpe for temporary duty, Lieut. WALTER H. GRIMWOOD, Fort Madison.

To Fort Riley for instruction, Lieut. HAROLD A. HOUSEHOLDER, Winthrop.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Camp Sevier, Lieut. OTTO J. BLESSIN, Postville.

Honorably discharged on account of physical disability not incident to the service, Lieut. CYRIL G. FIELD, Humboldt. On account of physical disability existing prior to entrance into the service, Lieut. WALTER G. FINLEY, Mondamin.

Kansas

To Camp Dix, Wrightstown, N. J., for duty, from New Orleans, Lieut. ALBERT M. DAWSON, Topeka.

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieut. JOHN L. WORK, Topeka.

To Camp MacArthur, Waco, Texas, base hospital, Lieut. WILLIAM W. REED, Blue Rapids.

To Camp Travis, Fort Sam Houston, Texas, base hospital, Lieut. WILLIAM R. BRADY, Parsons.

To Fort Oglethorpe for instruction, Lieut. JOSEPH H. MARKS, Valley Falls.

To Fort Riley for instruction, Lieut. ANSON B. INGELS, Larned.

To the inactive list, from Fort Lawton, Wash., Capt. CHARLES E. BROWN, Leavenworth.

Resignation of Lieut. HENRY D. BRUNIG, Hillsboro, accepted.

Kentucky

To Camp Shelby, Hattiesburg, Miss., base hospital, Capts. ROBERT L. WOODARD, Hopkinsville; HARRY C. WOODARD, Louisville; from Camp Cody, Lieut. HARRY F. McCORD, Ludlow; from Camp Gordon, Lieut. JOHN B. FLOYD, Louisville; from Camp Zachary Taylor, Major SIDNEY J. MEYERS, Louisville.

To Camp Travis, Fort Sam Houston, Texas, base hospital, from Fort Oglethorpe, Capt. OSCAR E. BLOCH, Louisville.

To Fort Oglethorpe for instruction, Lieut. PETER MEIER, Covington.

Louisiana

To Camp Beauregard, Alexandria, La., for duty, from Fort Oglethorpe, Lieut. WILLIAM L. STEWART, Collock.

To Camp Gordon, Atlanta, Ga., base hospital, Capt. ARTHUR L. WHITMIRE, New Orleans.

To Camp Joseph E. Johnston, Jacksonville, Fla., as a member of the tuberculosis examining board, from New Haven, Lieut. BEN R. HENINGER, New Orleans.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. DAWSON T. MARTIN, Acy.

Maine

To Camp Sherman, Chillicothe, Ohio; *Camp Custer*, Battle Creek, Mich.; *Camp Grant*, Rockford, Ill., and *Camp Zachary Taylor*, Louisville, Ky., for conference, and on completion *to his proper station*, from Camp Gordon, Major WILLIAM L. COUSINS, Portland.

Maryland

To Army Medical School for duty, from Camp Meade, Lieut. RALPH S. STAUFFER, Hagerstown.

To Camp Meade, Admiral, Md., with the board examining the command for nervous and mental diseases, Capt. ANDREW C. GILLIS, Baltimore.

To Fort McHenry, Md., for temporary duty, from Washington, Lieut. FRANK N. OGDEN, Sykesville.

Massachusetts

To Boston, Mass., for duty, Capt. HUBERT T. HOLLAND, Boston.
To Camp Devens, Ayer, Mass., base hospital, Lieut. FRANCIS G. BRIGHAM, Boston. With the board examining the command for nervous and mental diseases, from Camp Upton, Capt. RANSOM A. GREENE, Palmer.
To Fort Oglethorpe for instruction, Lieuts. ARTHUR B. HOLMES, Kingston; ARCHIBALD P. GARDNER, Lowell; WILLIAM L. FRASES, Lynn.
To the inactive list, from Camp Meade, Major SAMUEL J. MIXTER, Boston.
Honorably discharged, Lieut. WILLIAM T. McMAHON, Pittsfield.

Michigan

To Camp Dix, Wrightstown, N. J., for duty, from Camp Pike, Lieut. LEON J. GIBSON, Bay City.
To Camp Gordon, Atlanta, Ga., base hospital, Capt. OTTO L. RICKER, Cadillac.
To Camp McClellan, Anniston, Ala., base hospital, Capt. WILLIAM F. ACKER, Monroe.
To Camp Zachary Taylor, Louisville, Ky., with the board examining the command for nervous and mental diseases, from Camp Wadsworth, Lieut. HEINRICH A. REYE, Detroit.
To Fort Oglethorpe for instruction, Lieuts. MOSE M. HYMAN, Detroit; WILLIAM L. MACCANI, Ironwood.
To Rockefeller Institute for instruction in the treatment of infected wounds, from New York City, Lieut. GLENN B. CARPENTER, Detroit.
Resignation of Capt. BEVERLEY D. HARISON, Detroit, and Lieut. FREDERICK C. THIEDE, Monroe, accepted.

Minnesota

To Army Medical School for duty, from Camp A. A. Humphreys, Lieut. RALPH R. SIMMONS, Rochester.
To Camp Dix, Wrightstown, N. J., for duty, from New Orleans, Lieut. FREDERICK N. BJERKEN, Red Wing.
To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. MONTO C. PIPER, Sanborn.
To Camp Grant, Rockford, Ill., base hospital, from New York City, Lieut. EDWARD V. E. MASTIN, Rochester.
To Camp Jackson, Columbia, S. C., for duty, from Chicago, Lieut. ADOLPH E. DETUNCQ, Preston.
To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieut. GEORGE L. JOHNSON, Newfolden.
To Camp Wheeler, Macon, Ga., base hospital, Lieut. EARL W. GILREY, Minneapolis.

Mississippi

To Camp Shelby, Hattiesburg, Miss., base hospital, Capt. JAMES McE. GUTHRIE, Meridian.

Missouri

To Brownsville, Texas, base hospital, from McAllen, Texas, Lieut. MICHAEL J. OWENS, Kansas City.
To Camp Beauregard, Alexandria, La., base hospital, Capt. GUY TITSWORTH, Sedalia; GEORGE McC. BOTELER, St. Joseph.
To Camp Dix, Wrightstown, N. J., for duty, from Fort Riley, Lieut. ERNEST MITCHELL, La Monte.
To Camp Dodge, Des Moines, Ia., base hospital, Capts. JACOB M. EPSTEIN, FRANK J. KREBS, St. Louis; BUNN A. DUNBAULD, Webb City.
To Camp Greene, Charlotte, N. C., base hospital, from Fort Snelling, Major ROBERT BURNS, Jr., St. Louis.
To Camp Lee, Petersburg, Va., for duty, from Hoboken, Capt. JOHN P. BEESON, South West City.
To Camp Lewis, American Lake, Wash., for duty, Lieut. WALTER C. KLEIN, Kansas City; from Fort Riley, Lieuts. REGINALD C. McD. MILLER, Foristell; FRANK B. HILLER, ARTHUR C. LEONARD, Kansas City; WALDO H. WILL, Mehlville.
To Camp Logan, Houston, Texas, base hospital, Lieut. LUTHER S. JAMES, Blackburn.
To Camp MacArthur, Waco, Texas, base hospital, Lieut. LESLIE E. DEAN, Marysville.
To Camp McClellan, Anniston, Ala., base hospital, Capt. AUGUST G. WICHMANN, St. Louis.
To Camp Shelby, Hattiesburg, Miss., base hospital, Capt. NATHANIEL SAENGER, St. Louis.
To Fort Oglethorpe, base hospital, from Camp Jackson, Lieut. HARRY W. SCHUMACHER, St. Louis. For instruction, Lieut. ELIJAH A. SCOTT, St. Louis.
To Fort Riley for instruction, Lieut. ELMER F. KEARNEY, Oregon.
To Houston, Texas, Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. THEODORE S. BLAKESLEY, Kansas City.
To Newport News, Va., for temporary duty, Capt. HENRY H. LOOK, Kansas City.
To Rockefeller Institute for instruction in bacteriology, and on completion *to Army Medical School*, for duty, Capt. RUDOLPH BUHMAN, St. Louis.
Resignation of Lieut. GEORGE W. H. PRESNELL, Sikeston, accepted.

Montana

To Camp Grant, Rockford, Ill., base hospital, Capt. FREDERICK M. POINDEXTER, Dillon.
To Camp Lewis, American Lake, Wash., for duty, Lieut. ARTHUR S. NEEDLES, Scobey.
To Fort Riley for instruction, Lieut. GEORGE A. WINDSOR, Livingston.

Nebraska

To Camp Beauregard, Alexandria, La., for duty, from Fort Riley, Lieut. NEILL J. EVERITT, Omaha.
To Camp Dix, Wrightstown, N. J., for duty, from Fort Riley, Lieut. GEORGE H. DEMAY, Wilsonville.
To Fort Oglethorpe for instruction, Capt. ISAAC L. BOGEN, Lincoln.
To Fort Riley for instruction, Capt. JOHN G. W. WESTERHOFF, Carleton.
To Fort Sill, Okla., base hospital, Lieut. JAMES S. McAVIN, Omaha.
To Hoboken, N. J., base hospital, Capt. IUSTUS E. OLSSON, Lexington; Lieut. GEORGE H. WALKER, Lincoln.

Nevada

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieut. HALLE L. HEWETSON, Las Vegas.

New Jersey

To Camp Gordon, Atlanta, Ga., base hospital, Lieut. RALPH J. VREELAND, Clifton.
To Camp Jackson, Columbia, S. C., base hospital, Lieut. BENJAMIN F. SEAMAN, Raritan.
To Camp Joseph E. Johnston, Jacksonville, Fla., as a member of the tuberculosis examining board, Lieut. SAMUEL BARISHAW, Jersey City.
To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Capt. WILLIAM H. SLOCUM, Long Branch.
To Fort Oglethorpe for instruction, Capt. EDWARD W. MARKENS, Newark.
To Hoboken, N. J., for temporary duty, from Camp Meade, Capt. ROBERT E. SOULE, Newark.
To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Princeton, Capt. ANTHONY C. ZEHNDER, Newark.
To report by wire to the commanding general, Eastern Department, for assignment to duty, Capt. CHARLES H. PURDY, Jersey City.
Resignation of Lieut. ERNESTO CASINI, Garfield, accepted.

New Mexico

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieut. WILLIAM G. BASSETT, Des Moines.

New York

To Camp A. A. Humphreys, Accotink, Va., as orthopedic surgeon, from Army Medical School, Lieuts. ANTHONY MANGIARCINA, Brooklyn; ABRAHAM B. PEMSLER, New York.
To Camp Custer, Battle Creek, Mich., *Camp Grant*, Rockford, Ill., *Camp Dodge*, Des Moines, Ia., *Camp Zachary Taylor*, Louisville, Ky., and *Camp Meade*, Admiral, Md., for conference, and on completion *to his proper station*, from Williamsbridge, Major JOHN E. JENNINGS, Brooklyn.
To Camp Gordon, Atlanta, Ga., base hospital, Lieut. LOUIS F. KNOLL, Brooklyn.
To Camp Jackson, Columbia, S. C., base hospital, Lieut. EDWARD L. FROST, Buffalo.
To Camp MacArthur, Waco, Tex., for duty, from Camp Travis, Major JOHN T. SPRAGUE, Staten Island.
To Camp Meade, Admiral, Md., base hospital, from Hoboken, Capt. MARK L. FLEMING, New York.
To Camp Pike, Little Rock, Ark., as orthopedic surgeon, from Fort Oglethorpe, Lieut. HERBERT ADLER, New York.
To Camp Upton, L. I., N. Y., base hospital, Capt. EDWARD W. JONES, Watertown; Lieuts. JAMES F. CROCE, ARMIN V. ST. GEORGE, New York.
To Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. JOSEPH E. NOLL, New York.
To Camp Wheeler, Macon, Ga., base hospital, Lieut. CARL G. ZIMMERMAN, Elmira.
To Cape May, N. J., base hospital, from Camp Upton, Capt. HENRY A. FISHER, Brooklyn.
To Colonia, N. J., for temporary duty, from Fort Oglethorpe, Lieut. ELMER P. WEIGEL, New York.
To Fort Jay, N. Y., for duty, Lieut. MAX J. FEIN, Brooklyn.
To Fort Oglethorpe for instruction, Capt. THOMAS H. ORSER, Cold Brook; Lieut. ROBERT J. SHEA, New York.
To Hoboken, N. J., base hospital, from Camp Hancock, Lieut. BENJAMIN E. CARMEL, Brooklyn; from Camp Upton, Lieut. WILLIAM H. SEWARD, Amsterdam.
To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Fort Sill, Lieut. HARRY FRIED, New York.
To New Haven, Conn., for duty, Capts. FREDERICK J. BOWEN, Mount Morris; EDGAR C. JOYCE, New York.
To Plattsburg Barracks for temporary duty, and on completion *to his proper station*, from Fort Porter, Capt. JOHN GURNEY STOWE, Buffalo.
To report by wire to the commanding general, Eastern Department, for assignment to duty, Capts. CHARLES L. RANDALL, Franklinville; DAVID T. MARSHALL, Hollis.
To Wiliamsbridge, N. Y., for duty, Capts. CLARENCE C. CORYELL, New York; NORRIS Z. ORCHARD, Rochester; from Camp A. A. Humphreys, Lieut. JACOB I. STEINFELDER, New York.
Resignation of Capt. JOHN E. VIRDEN, New York, accepted.
The following order has been revoked: *To Lakewood, N. J.*, for duty, Lieut. RANDOLPH WEST, New York.

North Carolina

To Army Medical School for instruction, Lieut. JOHN H. BULLOCK, Oxford.
To Fort Oglethorpe for duty, from Camp Upton, Lieut. JACOB H. ROSZELLE, Salisbury. For instruction, Lieut. RICHARD F. YARBOROUGH, Louisburg.
To New Haven, Conn., for duty, from Camp Lee, Capt. BENJAMIN K. HAYS, Oxford.
To West Point, Miss., Signal Corps Aviation School, for duty, from Camp Sevier, Lieut. JULIUS J. BAREFOOT, Graham.

North Dakota

To Camp Grant, Rockford, Ill., base hospital, Lieut. WILLIAM H. WITHERSTINE, Grand Forks.
To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieut. JOHN A. JOHNSON, Grand Forks.
To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. LESLIE G. EASTMAN, Hazen.
To Fort Riley for instruction, Lieut. CHARLES A. SWANSON, Jamestown.

Ohio

To Camp Beauregard, Alexandria, La., for duty, from Fort Riley, Lieut. EVERETT C. ROBBINS, Cincinnati.
To Camp Crane, Allentown, Pa., for duty, from Fort Riley, Lieut. GALE G. GUTHRIE, Uhrichsville.
To Camp Custer, Battle Creek, Mich., base hospital, Lieut. CLARENCE T. BAHLER, Walnut Creek.
To Camp Devens, Ayer, Mass., base hospital, Lieut. EDGAR C. STEINHARTER, Cincinnati.
To Camp Gordon, Atlanta, Ga., base hospital, Lieut. GEO. M. KRIEGER, Cincinnati.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. CAMERON A. LEATHERMAN, Dayton.

To Camp Kearney, Linda Vista, Calif., base hospital, from New York, Lieut. HENRY SNOW, Jr., Norwood.

To Camp MacArthur, Waco, Texas, for duty, from Fort Oglethorpe, Lieuts. OTTO J. OWENS, Ottawa; CHARLES FABER, Toledo.

To Camp McClellan, Anniston, Ala., base hospital, Capt. FREDERICK W. HITCHINGS, Cleveland; Lieuts. DENEVIN SANDOE, Columbus; ALFRED H. POTTER, Springfield.

To Camp Sherman, Chillicothe, Ohio, base hospital, Capt. ROBERT G. NOBLE, Columbus; Lieut. WILLIAM H. STEELE, Montpelier.

To Fort Oglethorpe for instruction, Lieut. HORACE D. PRICHARD, Cleveland.

To Fort Sill, Okla., for duty, from Mineola, Lieut. FRANK S. VAN DYKE, Columbus.

To Hot Springs, N. C., for temporary duty, and on completion *to Fort Oglethorpe* for duty, from Fort Oglethorpe, Capt. HIRAM P. H. ROBINSON, Medina.

The following order has been revoked: *To Camp Sherman*, Chillicothe, base hospital, Lieut. DAVID H. COLEMAN, Cincinnati.

Oklahoma

To Camp Beauregard, Alexandria, La., for duty, from Fort Riley, Lieut. EDWARD S. WEAVER, Dill.

To Camp Devens, Ayer, Mass., base hospital, Lieut. WANN LANGSTON, Oklahoma City.

To Camp Logan, Houston, Texas, base hospital, Lieut. JOHN B. LEISURE, Watonga.

To Fort Bliss, Texas, as orthopedic surgeon, from Fort Sam Houston, Lieut. JOHN A. WALKER, Shawnee.

To Fort Riley for instruction, Lieuts. ELMER J. REICHLEY, Helena; ISAAC W. BALLINGER, Henryeytta; CHARLES B. SEXTON, Stillwater.

To Lonoke, Ark., Signal Corps Aviation School, for duty, from Camp Greene, Lieut. CHARLES D. BLACHLY, Drumright.

To report by wire to the commanding general, Southern Department, for assignment to duty, Lieut. RANDOLPH L. MONTGOMERY, Marlow.

Honorably discharged, Lieut. ROBERT S. RILEY, Hartshorne. On account of physical disability existing prior to entrance into the service, Lieut. WILLIAM J. OMER, Thomas.

Oregon

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieuts. ARTHUR W. BOSLOUGH, Ashland; WILLIAM H. POLLARD, Springfield.

Pennsylvania

To Army Medical School for duty, from Camp A. A. Humphreys, Lieut. FRED B. HARRINGTON, Pittsburgh; from Camp Meade, Capt. WILLIAM H. BAILEY, Philadelphia. For instructions, Lieut. JOHN R. DAVIES, Jr., Philadelphia.

To Camp A. A. Humphreys, Accotink, Va., as orthopedic surgeon, from Army Medical School, Lieut EDGAR B SLOTERBECK, Monessen.

To Camp Alfred Vale, Little Silver, N. J., to make nervous and mental examinations, and on completion *to his proper station*, from Camp Dix, Capt. PERCY DE LONG, Philadelphia.

To Camp Custer, Battle Creek, Mich., base hospital, Capt. CHARLES M. ADAMS, Pittsburgh; Lieut. CLYDE B. LAMP, McKeesport.

To Camp Dix, Wrightstown, N. J., base hospital, Lieuts. HAROLD H. LAMB, Braddock; GEORGE P. MEYER, Philadelphia. For duty, from New Orleans, Lieut. JAMES W. SILLIMAN, Bradenville.

To Camp Gordon, Atlanta, Ga., base hospital, from New Haven, Capt. ISAAC H. ALEXANDER, Philadelphia.

To Camp Sevier, Greenville, S. C., for duty, from Camp Custer, Major THOMAS W. JACKSON, Philadelphia.

To Camp Wheeler, Macon, Ga., base hospital, Lieuts. RALPH E. LEIDY, Boyertown; ERLE G. HAWMAN, Reading; FRANKLIN F. MASSEY, Wernersville. For duty, from Fort Oglethorpe, Lieuts. GUY E. DUTTER, JOHN H. WOOLRIDGE, Philadelphia.

To Fort Oglethorpe for instruction, Capt. ABRAHAM K. WANNER, Reading; Lieuts. RALSTON O. GETTEMY, Keffer; WILLIAM H. KOHLER, Milroy; PERCY A. BAY, Muncy Valley.

To New Haven, Conn., for duty, Capt. JAMES S. CRAWFORD, Pittsburgh.

To Rockefeller Institute for instruction in bacteriology, and on completion *to his proper station*, from Camp Dix, Lieut. CHARLES W. LUDERS, Cynwyd.

To Williamsbridge, N. Y., for duty, Capt. HARRY H. PENROD, Johnstown.

Resignations of Major HIRAM R. LOUX, Philadelphia; Capt. DAVID C. VOSLER, Ellwood City, and Lieut. ABRAHAM E. OLIENSIS, Philadelphia, accepted.

Rhode Island

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. JAMES M. McCARTHY, Woonsocket.

South Carolina

To Fort Oglethorpe for instruction, Capt. JAMES L. BOLT, Easley; Lieuts. JOHN S. WIMBERLY, Branchville; LAWRENCE S. FULLER, Jr., Laurens; ALLEN S. BEHLING, WILLIAM S. JUDY, St. George.

Resignation of Lieut. JOHN M. BEARDEN, Laurence, accepted.

South Dakota

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. LYLE HARE, Spearfish.

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Capt. JOHN W. BRACKETT, Sturgis; Lieut. DEWEY SUTTON, Redfield.

To Fort Riley for instruction, Lieut. JOHN S. TSCHETTER, Huron.

Tennessee

To Camp McClellan, Anniston, Ala., base hospital, Capt. MATTHEW G. BUCKNER, Nashville.

To Camp Travis, Fort Sam Houston, Texas, base hospital, from Camp Beauregard, Capt. WILLIAM A. CARNES, Memphis.

To Fort L. H. Roots, Ark., base hospital, Lieut. WILLIAM H. NILES, Tellico Plains.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. THOMAS F. MILLER, Knoxville.

Resignation of Capt. WILLIAM P. ATCHLEY, Knoxville, accepted.

The following order has been revoked: *To Camp Wadsworth*, Spartanburg, S. C., for duty, Lieut. LEROY S. McMULLEN, Knoxville.

Texas

To Camp Beauregard, Alexandria, La., base hospital, Capt. THOMAS N. GOODSON, San Antonio; Lieut. THOMAS M. JARMON, Terrell.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Riley, Lieut. WILLIAM C. KIDWELL, Bryan's Mill.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Riley, Lieut. LAWRENCE W. HOLLIS, Abilene.

To Camp MacArthur, Waco, Texas, as assistant to camp surgeon, from Fort Sam Houston, Capt. LYTTON G. AMENT, Victoria. For duty, from Fort Oglethorpe, Lieut. CHARLES M. McMILLAN, Plantersville.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. EMORY W. REEVES, Houston.

To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. FREDERICK W. FRANCIS, Fort Worth.

To Fort Riley for instruction, Lieuts. BENJAMIN F. RHOADES, Brackenbridge; JAMES W. STEVENS, Trenton.

To Prairie View, Texas, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Riley, Lieut. ALLEN M. BAKER, Carthage.

To Rockefeller Institute for instruction in bacteriology, and on completion *to his proper station*, from Camp Hancock, Capt. CHARLES B. McGLUMPHY, Galveston.

Resignation of Lieut. NICHOLAS C. BOETHEL, Leroy, accepted.

Utah

To Camp Dix, Wrightstown, N. J., for duty, from Fort Riley, Lieut. GEORGE W. HANKS, Lehi; from New Orleans, Capt. WALTER E. WHALEN, Ogden.

Vermont

To Fort Oglethorpe for instruction, Capt. SIMON G. START, Cambridge; Lieut. HAROLD L. WILLIAMSON, Bristol.

Virginia

To Camp A. A. Humphreys, Accotink, Va., as orthopedic surgeon, from Army Medical School, Lieut. MARSHALL L. BOYLE, Jr., Richmond.

To Camp Dix, Wrightstown, N. J., for duty, Major SAMUEL B. MOORE, Alexandria.

Washington

To Camp Grant, Rockford, Ill., base hospital, from Vancouver Barracks, Capt. WALLACE A. PRATT, Walla Walla.

To San Francisco, Calif., for duty, from Alcatras, Calif., Capt. FRANK H. COLLINS, Goldendale.

West Virginia

To Camp Dix, Wrightstown, N. J., for duty, from New Orleans, Lieut. RECE M. PEDICORD, Elm Grove.

To Camp Gordon, Atlanta, Ga., base hospital, Capt. HARRY H. YOUNG, Charleston.

To Camp Lee, Petersburg, Va., base hospital, Lieut. ARTHUR E. BAYS, Barboursville.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Lieut. JAMES M. FONTAINE, Charlestown.

To Fort Oglethorpe for instruction, Lieut. BENJAMIN H. HILDRETH, Worthington.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. JAMES W. HARTIGAN, Morgantown.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Fort McPherson, Ga.*, for duty, Lieut. BOAZ B. COX, Morgantown.

Wisconsin

To Camp A. A. Humphreys, Accotink, Va., with the board examining the troops for tuberculosis, from Camp Laurel, Capt. LEON H. FLANCHER, Milwaukee.

To Camp Grant, Rockford, Ill., base hospital, Capts. HARRY M. KAY, Madison; PHILIP A. FOX, Milwaukee; GIDEON BENSON, Richland Center; Lieut. HUGH C. RUSSELL, Milwaukee.

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Capt. ARTHUR E. WINTER, Tomah; Lieut. LOUIS M. PEARSON, Tomahawk.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Capt. CHRISTIAN U. SENN, Ripon. For duty, from Fort Riley, Major WILLIAM W. PRETTS, Platteville.

To Fort Riley for instruction, Lieut. WAYNE A. MUNN, Janesville.

To New Haven, Conn., for duty, Lieut. EDWARD P. ALLEN, Waukesha.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. EMMETT W. BOWEN, Watertown.

Danger from Thymol with Thyroid Disease.—A recent article by E. Edens in the *Medizinische Klinik*, 1917, No. 30, is summarized by the *Correspondenz-Blatt* to the effect that severe clinical symptoms from thymol were observed in two cases of thyroid disease. In one woman the thyroid had atrophied, and after taking thymol she developed severe spasms of the esophagus and stomach, with exhaustion and anemia. In the other case a woman of 48 had been growing thin for several years, with lassitude, palpitations, tremor and subfebrile temperature. No benefit was obtained from arsenic, calcium or sodium phosphate. She never had had actual goiter, but her neck had grown smaller in the last year or two. It was found that she had been using regularly for years a thymol mouth wash. After this had been discarded, her symptoms rapidly subsided, while her neck increased to its former size. McCarrison has reported the subsidence of goiter under thymol and Leichtenstern a death after 6 gm. of thymol. But with smaller doses than these, no untoward by-effects have been reported previously, to Eden's knowledge.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Personal.—Dr. David E. Stafford, San Francisco, has been placed in charge of medical affairs for the United States Shipping Board on the Pacific Coast.——Dr. Susan B. Tallmon Sargent, for several years medical missionary of the Congregational Church of San Jose, has returned after several years' of service in Lint Sing, China.

In the Hands of the Law.—A sentence of ten years' imprisonment in the federal prison at McNeill Island, Wash., and a fine of $5,000 was imposed by the United States District Court at Los Angeles, July 3, on "Dr." Frank Howenstein, for conspiracy to obstruct the selective draft law. The defendant was alleged to have induced draft registrants to undergo treatment for their eyes which would cause them to be rejected as unfit for military service.——The licenses of the following San Francisco physicians were said to have been revoked by the state board of medical examination and registration: Dr. George W. O'Donnell, convicted of illegal advertising; Dr. William L. Owen, convicted in New York courts of crime involving moral turpitude for which he served in the federal prison, Atlanta; Dr. James Hegyessy, for advertising with intent to deceive, and Dr. Marion Thrasher and Fischer R. Jordan, convicted of aiding, abetting or offering to procure an illegal operation. Dr. Frederick W. F. Riehl, Alameda, is said to have been found guilty of advertising to cure sexual diseases and to have been granted probation for two years. Dr. Frank Duncan was convicted on the charge of malpractice, Dr. Robert D. Shoults of using prefix or suffix tending to show holder to be entitled to practice along other principles, granted probation for two years. Drs. J. E. Thompson and Robert J. G. O'Connell were dismissed, and Drs. Albert P. Woodward and Ephrin Northcott are convicted for aiding, abetting or offering to procure an illegal operation. In these cases adjudgment was suspended until 1920. The board also refused to restore the license, which was revoked some time ago, of Samuel R. Chamley, a so-called "cancer specialist."

COLORADO

New County Society.—Physicians of Otero County met at La Junta recently and organized the Otero County Medical Society, electing Dr. G. W. Phillips, president; Dr. Ward E. Fenton, Rocky Ford, vice president, and Dr. H. G. Sigman, Rocky Ford, secretary-treasurer.

Personal.—The suit of Mary Riccott for $5,000 damages against Dr. Clement V. Marmaduke, Pueblo, was decided in favor of Dr. Marmaduke, June 20.——Dr. Edward J. Murray, Alamosa, has resigned to accept the position of medical superintendent of the Bluegrass Sanatorium, Lexington.

ILLINOIS

Hospital Dedicated.—The new hospital at Highland Park, erected at a cost of $100,000, was dedicated with formal ceremonies, July 12. The mayor of Highland Park acted as chairman of the meeting.

Negro Postgraduate Medical School.—It is reported that the Provident Hospital of Chicago, which is a hospital for colored persons, has obtained a charter for a postgraduate medical school for negro physicians.

Healer Found Guilty.—William B. Graves of East St. Louis was found guilty by a jury in St. Clair County for treating human ailments without a state license. The complaint was filed by the department of registration and education.

Personal.—Major Albert E. Halstead, Chicago, M. R. C., U. S. Army, has been promoted to the rank of lieutenant-colonel, National Army, and has been placed in command of Base Hospital No. 53, France.——Dr. Albert I. Bouffleur, Chicago, chief surgeon of the Chicago, Milwaukee and St. Paul system, was seriously injured by the overturning of his automobile near Orick, Calif., July 3.

INDIANA

State Hospital Overcrowded.—The Central Indiana Hospital for the insane has been forced to place on the waiting list all applications for the admittance of new patients within the last month because of the overcrowded condition and the scarcity of labor. There are now more than 1,500 patients in the hospital.

Sanatorium Capstone Unveiled.—The capstone of the new $150,000 tuberculosis sanatorium, which is being erected by the Allen County Anti-Tuberculosis Society at Fort Wayne, was unveiled, June 30, with impressive ceremonies. The hospital is to be named in honor of Irene Byron, a nurse who lost her life from tuberculosis, contracted while nursing patients suffering from the disease.

Personal.—Major David C. Peyton, Jeffersonville, who has been general superintendent of the Indiana Reformatory for nine years, has resigned to enter the service. He was a medical officer in the Spanish-American War.——Dr. Angus C. McDonald, Warsaw, is said to have had a narrow escape from drowning in Fox Lake, Ill., recently.——Dr. Calvin W. Burket, Warsaw, has accepted the position of chief surgeon of the Soldiers' Home, Lafayette.——Dr. G. H. Wisner, formerly connected with the Methodist Hospital, Indianapolis, has been appointed by the city board of health as medical resident at the City Hospital.

IOWA

Personal.—Dr. Henrietta A. Calhoun has been appointed assistant professor of otology and bacteriology, and Dr. Sarah R. Kelman has been appointed instructor in the same subject, on the medical faculty of the University of Iowa, Iowa City.

Hospital Internship Required for License.—At a recent meeting, the Iowa State Board of Medical Examiners voted that all applicants seeking a license to practice in Iowa after July 1, 1923, shall be required to have completed an intern service of not less than one year after graduation from a medical school in a hospital approved by the Iowa board. This requirement applies to all students beginning the study of medicine after July 1, 1918.

Des Moines Valley Society Meeting.—At the forty-seventh annual meeting of the Des Moines Valley Medical Society, held at Ottumwa, June 27, presided over by Dr. Martin F. Moore, Martinsburg, vice president, in the absence of Dr. Charles H. Magee, who is in the military service, the following officers were elected: president, Dr. Samuel K. Davis, Libertyville, and vice presidents, Drs. Martin F. Moore, Ottumwa, and Taylor R. Jackson, Albia.

Infantile Paralysis in Dubuque.—In an effort to stop the spread of infantile paralysis in Dubuque, the authorities have ordered all the theaters, Sunday schools, playgrounds and other places where children gather to be closed. Since July 4 there have been forty-two cases reported with ten deaths. Dr. Edward C. Rosenow arrived at Dubuque, July 9, with laboratory equipment from the Mayo Foundation, Rochester, Minn., and has started work to check the epidemic.

KENTUCKY

Health Board Troubles.—There are two state boards of health in existence in the state of Kentucky at present. The new board named by Governor Stanley consists of Drs. Carlos A. Fish, Frankfort; George T. Fuller, Mayfield; Josiah G. Furnish, Covington, and H. Harvey Carter, Shelbyville, who are members of the old board, Dr. Argus D. Willmoth, Louisville, and Elijah H. Maggard, Wayland, who are members of the state tuberculosis commission, Dr. Oscar C. Dilly, Louisville, whose name was submitted by the Kentucky Pharmaceutical Commission and the state board of pharmacy, and Dr. Carl Lewis Wheeler, Lexington, and John D. Williams, Ashland, members from the state at large. The tenth member elected by the appointed members is Dr. William L. Heizer, Bowling Green, formerly secretary of the state tuberculosis commission, who by virtue of his office becomes executive officer and secretary of the board. At the first meeting of the board, Dr. Willmoth was elected president, and Dr. Wheeler, vice president. After hearing arguments on July 12 on a motion to dissolve the injunction granted by Judge Stout of the Franklin Circuit Court, enjoining the newly named board of health from performing the duties imposed on it by the legislative act of March 4 last, the Court of Appeals of Kentucky, sitting in special session

in Louisville, took the question under submission, and announced that the injunction would prevail until the matters involved are finally determined by the court. As a constitutional question is involved and the briefs submitted contain numerous references, further time was needed by the court. Under the ruling the new board of health appointed by Governor Stanley is without jurisdiction and the old board of health, of which Dr. J. N. McCormack is secretary, is acting.

MARYLAND

Personal.—The University of Maryland Hospital Unit, which was mobilized at Camp Meade, and is commanded by Major Archibald C. Harrison of Baltimore, has arrived in France.——Dr. Howard Bratton, Elkton, has been appointed physician to the Cecil county jail.——Dr. William S. Thayer, Baltimore, has been made a foreign member of the French Academy of Medicine.

Typhus in Gypsy Camp.—Typhus fever has broken out in a gypsy camp on the outskirts of North East, Cecil County, and three deaths from it have been reported to the state board of health. The malady so far has been confined to one family. Dr. C. Hampson Jones, Baltimore, chief the State Bureau of Communicable Diseases, has placed the entire camp under rigid quarantine.

New Surgical Wards Opened.—Two new surgical wards at U. S. Army General Hospital No. 2, Fort McHenry, were opened, July 12. The wards are for orthopedic patients, and are in charge of Major Samuel C. Baldwin, M. R. C., U. S. Army. Each of the wards will accommodate thirty-six patients and only men with diseases of bones or fractures will be treated. Shops have been erected near the wards in which artificial limbs and braces will be made. Most of the intricate work in the manufacture of these articles will be done by instructors and enlisted men, but patients are being taught much of it.

Paralysis on Increase.—More infantile paralysis appears to be in Baltimore than was supposed from the sporadic cases announced by the health department. Sixteen cases have been recorded at the state department of health since the latter part of April and two deaths have been reported. Eight cases have been reported from the counties. Dr. C. Hampson Jones, Baltimore, chief of the State Bureau of Communicable Diseases, and Dr. John F. Hogan, Baltimore, head of the City Bureau of Communicable Diseases, agree that there is no necessity for taking any drastic measures other than quarantining the infected households.

Intensive Courses in Nursing at Hospitals.—Since the South Baltimore Eye, Ear and Throat Hospital opened limited courses to young women desiring to qualify as hospital aides, the James Lawrence Kernan Hospital for Crippled Children and the Union Protestant Infirmary have opened their doors to a certain number of volunteers who will take a course of training extending over varying periods. The pupils at the Kernan Hospital will be given an intensive training course under the direction of the superintendent and will also serve as nurse maids, learning how to feed, dress and properly handle the little patients, how to put on and adjust their braces and other surgical apparatus. The pupils at the Union Protestant Infirmary will act as aides to the nurses and will assist with convalescent patients. After a month at the Union Protestant Infirmary, they will go to the Children's Hospital School, where they will spend another month. They are subject to the same rules and regulations as pupil nurses. After they have completed their training period they will be subject to call by the Union Protestant Infirmary in any nursing emergency that may arise.

MASSACHUSETTS

Edsall Succeeds Bradford.—Dr. Edward H. Bradford, Boston, for nine years dean of Harvard Medical School and for thirty-eight years a member of its faculty, has resigned to take effect, September 1. He will be succeeded by Dr. David Lynn Edsall, Boston, professor of clinical medicine.

Organize to Solve Public Health Problems.—Representatives of the Health Conservation Association met in the State House, Boston, July 9, and organized the Massachusetts Health Committee, with the following officers: chairman, Dr. Eugene R. Kelley, Boston, state commissioner of health; treasurer, Miss Gertrude Keiberly, vice chairman of the child welfare department of the National Council of Defense, and director, Prof. Charles E. Bellaty, Boston University.

Personal.—Dr. Merrill E. Champion, Wollaston, state district health officer for the eastern district, has been appointed director of the department of hygiene of the state department of health.——Capt. Alec N. Thomson, M. R. C., U. S. Army, Office of the Surgeon-General, Washington, D. C., has been detailed to the state department of health for three months as temporary chief of the subdivision of venereal diseases. ——Dr. Mary R. Lakeman has been appointed epidemiologist of the subdivision of venereal diseases.——Dr. Francis X. Mahoney, health commissioner of Boston for eight years, will resume private practice.——Dr. Samuel E. Fletcher, Chicopee, has been appointed medical examiner (coroner) of Hampden County.——Dr. Philip P. Moore, Gloucester, has been appointed medical examiner (coroner) of Essex County.—— Dr. Nathaniel R. Perkins, Boston, has been appointed a member of the board of registration in medicine.——Dr. Henry E. Doonan, South Hadley Falls, has been appointed associate medical examiner (coroner) of Hampshire County.

Instruction and Research in Industrial Hygiene, Harvard Medical School.—The Harvard Medical School is prepared to offer courses of instruction in industrial hygiene and facilities to investigate the problems of industry. The school has assurance of sympathetic cooperation through an advisory board of business men consisting of: W. E. McKay, Massachusetts Gas Co., and New England Manufacturing Co., S. Harold Green, Lockwood, Greene Co., and Frank J. Hale, Saco-Lowell Shops. The president of Harvard University has appointed a committee on industrial hygiene which is organized as follows: Dr. David L. Edsall, Boston, professor of clinical medicine; Dr. Reid Hunt, Boston, professor of pharmacology; Dr. Milton J. Rosenau, Boston (chairman), professor of preventive medicine and hygiene, and Dr. Cecil K. Drinker, Woods Hole (secretary), assistant professor of physiology. Under present conditions instruction and research in industrial hygiene will center about chemistry, physiology and medicine, and in these subjects new departments will be created. Courses will also be developed in the pharmacologic, sanitary and social phases of industry, supplementing the work of the school of public health. Fellowships and scholarships are available for those properly qualified. Opportunities will be open to three separate groups as follows: (1) research workers, (2) medical officers for large industries, and (3) inspectors of industries. In view of the war conditions alterations in the above plans may become necessary. For information apply to Dr. C. K. Drinker, Harvard Medical School, Boston.

MICHIGAN

Sanitary Train Hike.—Under command of Lieut.-Col. Lewis W. Bremerman, formerly of Chicago, the 310th Sanitary Train moved out of Camp Custer for a two-day hike. The party consisted of four fully equipped ambulance companies and four field hospital companies.

Personal.—Dr. William R. Vis, Detroit, has been appointed head of the Grand Rapids Municipal Tuberculosis Sanatorium and will be in charge of the tuberculosis work in that city. ——Asst. Police Surg. Floyd W. Clements, Detroit, resigned, June 1, to accept a commission in the Medical Reserve Corps.

Ford Hospital Closed.—It is announced that the Henry Ford Hospital, Detroit, was closed, June 15, and that at present ninety employees of the institution are enlisted in various plants of the United States service and of these, forty-two are already active. The hospital has accommodation for 400 patients and will, it is believed, be utilized for the care of wounded and convalescent soldiers.

MINNESOTA

Control of Venereal Diseases.—The state board of health of Minnesota has formed a division of venereal diseases of which Dr. Henry M. Bracken, St. Paul, is secretary and executive officer; Dr. Charles E. Smith, Jr., St. Paul, assistant secretary; Dr. Harry G. Irvine, Minneapolis, director; Mr. L. W. Feezer, assistant director; Dr. Mabel S. Ulrich, Minneapolis, supervisor of social hygiene, and Dr. Charlotte G. Ashbrook, chief social worker. Funds for the administration of this division have been secured. The division will work on the following lines: The passage of laws or regulations and the enforcement of existing laws to make it possible adequately to control all classes of infected persons; the care and control of diseased patients, and the control of the prostitute. The division desires the cooperation of the medical profession in these important matters. Syphilis, gonorrhea and chancroid have been added to the list of reportable dis-

eases, but the names and addresses of the patient need not be reported, providing the physician who is to assume the responsibility of the patient, renders the entire treatment. Each physician has been supplied with pamphlets regarding venereal disease for distribution. Druggists are to be required to report the names and addresses of all persons who apply to drug stores for treatment and the state board is planning to furnish full laboratory facilities both for the Wassermann test and for the examination for the gonococcus, to all physicians who desire them.

MISSOURI

College Not Recognized.—An official report states that at the meeting of the Missouri State Board of Health, held, July 8, recognition was withdrawn from the St. Louis College of Physicians and Surgeons.

State Board Appointments.—The governor, July 9, reappointed Dr. T. Hurly Wilcoxen, Bowling Green; Thomas A. Son, Bonne Terre, and Emmett P. North, St. Louis, members of the state board of health for a period of four years.

NEBRASKA

Personal.—Dr. George H. Brash, Beatrice, is critically ill in a local hospital, with nephritis.——Drs. Charles C. Tomlinson and George A. Young have been appointed assistant health commissioners of Omaha.——Dr. Joseph J. Hompes, Lincoln, has been appointed a member of the advisory board of the state board of health.

Hospital Items.—The city council of Omaha has formally approved the plan of Health Commissioner Manning to establish an internment hospital for women and girls at Twenty-Second Street and St. Mary's Avenue. This hospital has a capacity of sixty beds.——Contracts for the construction of the new Lutheran Hospital, Beatrice, has been awarded. The building will cost $125,000 and will be completed within eight months.

NEW YORK

Personal.—Dr. Robert P. Bush, Horseheads, was elected medical director of the New York State Department, G. A. R., at its annual meeting, June 27.——Dr. John H. Pryor has been reelected president of the Buffalo Tuberculosis Association.

Long Island Hotel for Army Hospital.—The government has signed a contract by which the Hotel Nassau, Long Beach, L. I., will be taken over early in September for use as an Army convalescent hospital. It is estimated that 2,000 convalescents can be accommodated.

Schools Kept Open During Measles Outbreak.—A recent bulletin of the New York State Health Department points out that it is not always advisable to close the schools in order to control an outbreak of measles. When measles appeared in Kingston, the sanitary supervisor, Dr. Laidlaw, made a survey and found that there had been 355 cases of measles reported to the city health officer. A survey of the schools showed that 83 per cent. of the children in the parochial schools and 79 per cent. of the children in the public schools were immune to measles. The question to be determined was whether it was better to close the schools to 2,268 children who were immune or to watch 756 children who were non-immune. The latter course was decided on. Just as soon as a child exhibited signs of measles he was sent home. By daily visits to the schools, the school physician was able to detect and control the beginning cases.

New York City

Personal.—Dr. Lewis S. Pilcher, Brooklyn, was elected senior commander of the New York State Department, G. A. R., at its annual meeting, June 27.

Shore Drives for Sick Soldiers.—The Brooklyn branch of the National League for Women's Service has opened a home for convalescent soldiers and sailors on the Shore Road at Eighty-Ninth Street, Brooklyn. To this are brought for day's outings convalescent men in the hospitals. Ambulances and private cars go for them in the morning and they are returned in the evening.

OHIO

Personal.—James E. Bauman, assistant commissioner of health of Ohio, has been placed in charge of the office of the state health commissioner during the absence of Major Allen W. Freeman who is in the military service.

Medical Council Named.—Committees constituting a city medical council to assist in developing a city wide system of medical service and education in connection with the social unit plan were named, July 1, and the meeting held at the Cincinnati General Hospital which was attended by sixty physicians represented various branches of medicine. Dr. John H. Landis, health officer of Cincinnati, appointed in charge of the temporary organization of these committees Drs. J. Victor Greenebaum, William D. Porter, E. Otis Smith, John D. Miller, David I. Wolfstein, Robert Carothers, William Mithoefer, Sidney Rauh, Edwin W. Mitchell and Willard D. Haines.

Control of Venereal Diseases.—Ohio is the thirteenth state to centralize its activities for the control of venereal diseases by placing them under a separate bureau in its state health department, according to a statement from the Ohio State Department of Health. Such a bureau has been in operation for several months and is carrying on educational work throughout the state and is encouraging the local health departments of the state to enlist in the campaign. The new venereal disease regulations that went into effect, July 1, are expected to aid in the campaign by increasing the health officials' knowledge of the prevalence of venereal infections and by providing for the isolation of infected persons who are likely to menace the public health. The new regulations require reporting of all cases of venereal diseases, with name of patient and probable source of infection, by physicians, dentists, hospital superintendents and heads of various institutions. Medical examination of prostitutes and others suspected of having a venereal disease is provided for, and quarantine of diseased persons, where such quarantine is deemed necessary by the state commissioner of health, is required.

OREGON

Personal.—Lieut. Albert A. Grossman, M. R. C., U. S. Army, Portland, attached to the Sixty-Second Battalion, Machine Gun Corps, British Expeditionary Forces, has been awarded the military cross by King George.

Medical Board Elects Officers.—At a recent meeting of the Oregon State Board of Medical Examiners, the following officers were elected for the ensuing year: Dr. Urling C. Coe, Bend, president; Dr. Frank E. Smith, Portland, treasurer, and Dr. Frank W. Wood, Portland, secretary.

PENNSYLVANIA

Lehigh Valley Association to Meet.—The annual meeting of the Lehigh Valley Medical Association will be held at Kittatinny, Delaware Water Gap, July 25, and the principal address will be delivered by Dr. Ernest LaPlace of Philadelphia on "Focal Sepsis in Relation to General Practice."

Quarantine at Allentown.—On account of the epidemic of measles in Allentown, a quarantine has been ordered affecting all children under 16 years of age. They are forbidden to attend Sunday school, church, or to go to any such public places as playgrounds, moving picture shows and parks. The playground system, which was to have opened, July 4, has been postponed. During June there were 789 cases of measles in the city.

Baby Saving Exhibit.—Two traveling teaching exhibits, under the direction of the state health department at Harrisburg, have been opened, one at Willow Grove Park, Philadelphia, and the other at Pittsburgh, to instruct the public on many important matters relating to health hygiene and sanitation, particularly toward baby saving. The exhibit at Willow Grove is in charge of Dr. William C. Miller, Harrisburg.

Personal.—Dr. Edward R. Walters, formerly director of health and charities at Pittsburgh, has been appointed medical adviser to the state workmen's compensation board of the western Pennsylvania district, with headquarters at Pittsburgh.——Dr. Roscoe F. Mauser, Fountain Springs, former resident surgeon at the Shamokin City Hospital, but who has been in service in France for two years, first with the French ambulance corps and later with the American ambulance corps, has been awarded the Croix de Guerre.

Philadelphia

Personal.—Dr. Wilmer Krusen, director of public health and charities, has been forced to drop his work because of a severe attack of tonsillitis.——Dr. William Wayne Babcock has been made a lieutenant-colonel and is stationed at the U. S. General Base Hospital No. 6, Fort McPherson, Atlanta, Ga.

SOUTH DAKOTA

Personal.—The state university at Vermilion has bestowed the degree of LL.D. on Dr. Leonard C. Mead, superintendent of the State Hospital for the Insane, Yankton.——Dr. Albert Sherrill, Sioux Falls, director of the hospital at Fort Crook, Omaha, is reported to be in a serious condition as the result of injuries received in an automobile accident.——Dr. William F. Keller, health officer of Sioux Falls for ten years, has resigned.

TENNESSEE

Hospital Site Purchased.—A tract of 159 acres of land has been purchased near Oakville as a site for the Shelby County Tuberculosis Sanatorium, which will be known as the Oakville Memorial Sanatorium.

Colored Physicians Elect Officers.—At the annual meeting of the Volunteer State Medical Association, held in Clarksville, last month, Dr. Charles A. Kelley, Clarksville, was elected president, and Dr. J. H. Hale, Nashville, secretary.

Campaign for Base Hospital.—The women of Memphis are making plans for a vigorous drive to secure $50,000 to be used by the Base Hospital No. 57, the Memphis Unit to provide extra care and attention for the sick and wounded soldiers. Mrs. A. S. Buchanan, Memphis, is chairman of the committee.

Personal.—Mrs. John Hill Eakin has been elected president of the state board of charities succeeding Dr. I. Lewenthal who was elected vice president.——Dr. William H. Bruce, a retired practitioner of Mount Pleasant, is seriously ill from an overdose of poison which he took accidentally in mistake for quinin.——Dr. Rufus E. Fort, Nashville, has resigned from the vital statistics bureau of the state board of health.

TEXAS

Personal.—Dr. S. L. Ingham, Canyon, while visiting Hampton, Iowa, was taken ill with appendicitis and was operated on at the Lutheran Hospital in that city, June 19. He is making satisfactory progress toward recovery.——Drs. Hiram B. Henry, Jacksonville, and Aleck P. Harrison have been appointed field directors of the bureau of rural sanitation of the Texas State Board of Health.

Prohibits Venereal Advertisements.—A new law has been passed in Texas which prohibits the advertising of remedies for venereal diseases and advertisements in which such diseases are mentioned or which direct the attention of the public to an office or person where such medicine or treatment may be obtained. A fine is provided for the publishing, delivering or distributing of such advertisements, as well as for those who permit placards or posters containing such information to remain on buildings controlled by them. The law is distinctly aimed at the male specialists and remedies for male diseases.

VIRGINIA

Society Suspends Meetings.—The board of directors of the Southwestern Virginia Medical Society has decided to discontinue meetings of the society until after the close of the war.

Personal.—Dr. William A. Brumfield, Richmond, who has been appointed acting assistant surgeon, U. S. P. H. S., will be in charge of the venereal disease campaign with headquarters in Richmond.——Dr. Robert L. Wilkins, Alexandria, has been reelected state commander of the Knights of Maccabees, and Howard Urbach, Richmond, has been elected state physician.

CANADA

Academy Election.—The Academy of Medicine, Toronto, elected the following officers at its annual meeting: president, Col. Alexander Primrose, C. B.; vice president, Dr. Edmund E. King; secretary, Dr. Jabez H. Elliott, and treasurer, Dr. J. Herbert McConnell.

Venereal Disease Regulation.—The provincial board of health of Ontario has issued a volume of regulations in pamphlet form, respecting venereal diseases, including suggested plans of treatment for the guidance of medical practitioners. Secrecy is emphasized with regard to all matters that may come to the knowledge of the practitioner.

Housing Committee Appointed.—The Ontario government has appointed a housing commission, of which Sir John Willison is chairman. It is said that in Toronto alone 25,000 extra houses will be needed to accomodate Toronto's population in the months of the coming winter. The medical officer of health has placed himself on record as being opposed to the erection of departmental houses.

When Prescribing of Liquor Is Proper.—The Ontario Medical Council is advising physicians on the roll of membership of the College of Physicians and Surgeons that "the giving of orders by medical men for the obtaining of alcoholic liquors is justified in any case in which the medical man is satisfied, 'of his own knowledge' that the use of alcoholic liquor is necessary and proper for the treatment of the patient."

Personal.—Col. Harold C. Parsons has arrived home in Toronto from overseas.——Col. Clarence L. Starr, Toronto, has returned from London, England, where he has been doing special orthopedic surgery in a military capacity.——Dr. T. R. Elliott, London, England, is mentioned as a likely appointee to a professorship in research medicine in the medical faculty of the University of Toronto.——Col. John M. Elder, Montreal, has been created a Companion of St. Michael and St. George.——Dr. Frederick N. G. Starr, Toronto, is spending a two months' vacation in the Maritime provinces. ——Dr. David M. Mathieson, major and senior adjutant of No. 2 District Demobilization Depot at Toronto, has resigned. Dr. Mathieson was overseas with the Canadian engineers. He was for a time officer in command of the Spadins Avenue Military Hospital, Toronto.——Major Edward Shapter Jeffrey, Toronto, has been made deputy assistant director of the medical corps in Toronto.——Capt. Calvin A. Ames, C. A. M. C., of the base military hospital, Toronto, has been attached to the aeronautical school in that city.——The Hon. Dr. Henri S. Beland, M. P., St. Joseph de Beauce, Que., formerly postmaster-general of Canada, who has been a prisoner for more than three years in Germany, recently arrived in England from Holland. He will sail for Canada in the near future.

GENERAL

Harvard Alumni Election.—At the annual meeting of the Harvard Alumni Association, Dr. Henry Jackson, Boston, was elected president, and Dr. William C. Quinby, Baltimore, secretary-treasurer.

District Society Meeting.—The Iowa and Illinois Central District Medical Association held a meeting at the Outing Club, Davenport, Iowa, July 11, at which Major John M. Dodson, dean of the College of Medicine of the University of Chicago, delivered an address on "The Medical Profession and the War."

Sisters of Charity Organize Base Hospital.—The American Sisters of Charity, for the first time since the war began, have enlisted as war nurses. St. Vincent's Hospital of Birmingham, Ala., has organized the Loyola Unit, known as Base Hospital No. 102, which is being outfitted in New York. The sisters wear the habit of their order, but otherwise follow Red Cross rules.

Jurisprudence Society Ends.—The majority of the members of the American Association of Medical Jurisprudence have filed a petition in the Supreme Court for dissolution of the corporation. The petition shows that the membership has decreased from 200 to twenty-three, and that there is a general lack of interest in the organization. The judge signed an order directing all persons interested to show cause, July 30, why the corporation should not be dissolved.

Sioux Valley Academy Not to Meet.—Dr. Lorenzo N. Grosvenor, Huron, S. D., secretary of the Sioux Valley Eye and Ear Academy, announces that there will not be a meeting of the academy at Omaha, July 25, as previously announced, on account of the number of members of the academy who are in active military service, the difficulty of securing papers, and the nearness of the meeting to that of the American Academy of Ophthalmology and Oto-Laryngology and the Fourth Colorado Ophthalmological Congress at Denver, August 5 to 7.

Bequests and Donations.—The following bequests and donations have recently been announced:

Harvard Medical School, a donation of $25,000 by an anonymous benefactor to establish a scholarship to bear the name of Dr. Edward H. Bradford, Boston, dean of Harvard Medical School.

Mt. Sinai Hospital, New York City, $25,000, and United Hebrew Charities, New York City, $10,000, by the will of Meyer H. Lehmen.

Saranac Lake, N. Y., General Hospital, about $1,000, the proceeds of a baseball game and circus.

Holy Ghost Hospital for Incurables, Boston, $24,000, and the residue of his property after certain other public and private bequests have been made, and Carney Hospital, South Boston, $1,000, by the will of Dr. John E. Somers, Cambridge.

FOREIGN

Scarcity of Gasoline in Switzerland.—The authorities of Switzerland by an order dated July 14, 1917, restricted the purchase of gasoline for motor vehicles to persons provided with a permit from the county (canton) testifying to their need for the use of a motor vehicle in the practice of their profession, and further provided with a gasoline ration card, to be renewed monthly.

Organization of Medical Men in Spanish Parliament.—The physician and pharmacist members of the lower house of parliament in Spain have organized, with Dr. F. Rodriguez at the head. They meet to discuss questions affecting the two professions in particular, and to seek to influence legislation in matters affecting the public health. The members include Drs. Pi y Suner, Gil, Gimeno, Villamil, Llanso and Villalobos, the latter acting as secretary. Eleven physicians in the upper house have also appointed a committee for a similar purpose. This committee consists of Drs. Cortezo, Gimeno and Pulido, and it is expected to cooperate with the organized medical men in the lower house. The *Medicina Ibera* in commenting on this organized action in favor of improved public health legislation and of matters affecting the profession, urges physicians throughout the country to sustain the efforts of these parliamentary groups so that their work may be crowned with success. The *Siglo Medico* comments that, although only in its incipiency, it looks as if a serious campaign on behalf of matters affecting the public health had now been started by the medical members of the two houses of parliament.

Deaths in the Profession Abroad.—N. Achucarro of Madrid, noted for his works on the histopathology of the nervous system, member of the editorial staff of the *Siglo Medico*, aged 37.——Lieut.-Col. **H. Moore** of Dublin, aged about 46, who succumbed to the effects of wounds at the front.——**F. Ortega** of the City of Mexico, stabbed in the abdomen by bandits as he was leaving his home to answer a late call.——The *Nederlandsch Tijdschrift* mentions the death of **A. Kolisko** of Vienna, professor of pathologic anatomy, and the *Norsk Magazin* reports the death of **L. Edinger,** a pioneer in the field of the comparative anatomy of the brain, director of the Neurologic Institute at Frankfort-on-the-Main, aged 63.——The death is reported of **Leopold Meyer,** professor of the diseases of women and children at the University of Copenhagen and one of the leading obstetricians of Denmark and of the world. He has published, among others, authoritative works on normal and on pathologic pregnancy, parturition and childbed, on the menstruation process and its pathologic variations, and completed in 1915 a large manual of obstetrics for physicians and medical students. Meyer was a familiar figure at international medical gatherings and is said to have visited America as early as in Sayre's and Emmet's day.

MEXICO

The Medical Toll of Typhus.—The sanitary inspector of the Mexican National Public Health Service, Dr. J. Garcia, is another medical victim of typhus.

Medical Director of General Hospital.—Dr. R. Carrillo, professor of obstetrics and midwifery, has been appointed director of the General Hospital of the City of Mexico.

Society Organized in Mexico to Combat Blindness.—Dr. Vasconcelos announces in the *Universal* the foundation of an organization to combat blindness. The director of the school for the blind in the City of Mexico, Dr. J. J. Izquierdo, is the secretary of the new society which is called the Comité para combatir la ceguera. The other officers are leading women.

The Booklets of the Mexican Preventive Association.—Dr. E. Landa is the author of the booklets for workingmen and for mothers and teachers, destined to enlighten youth and the heedless in respect to the dangers of venereal diseases. The pamphlets were issued under the auspices of the Sociedad Mexicana Sanitaria y Moral de Profilaxis de las Enfermedades Venereas in 1914 and are being widely distributed.

Representative Medical Journal to be Founded in Mexico.—At the last national medical congress in Mexico, it was voted to found a medical journal in which to publish the works of Mexican physicians and surgeons and to keep them informed of the progress of the medical sciences in other lands. The executive committee, preparing for the approaching medical congress, the sixth, has ratified this decision, and Dr. Francisco Bello of Puebla has been appointed general manager of the new enterprise.

CORRECTION

Article by Rieger and Solomon.—In the article entitled "The Circulation of Arsenic in the Cerebrospinal Fluid," by Drs. John B. Rieger and Harry C. Solomon, THE JOURNAL, July 6, page 15, the abbreviation "mg." used to denote the amount of arsenic found, should read "mmg.," denoting micromilligram instead of milligram.

PARIS LETTER

PARIS, June 14, 1918.

Physical Education and Athletics for the Young

In the course of a recent manifestation in favor of physical education, organized at Bordeaux, M. Henry Paté, deputy, delivered a very interesting address in which he stated that he and some of his colleagues in the house of deputies had decided to participate actively in the physical education and athletics of the young, in accordance with the following program: 1. To adopt a general method of rational physical instruction, based on a knowledge of the physical needs of the subject, the specialization of the work, and the attraction of the exercise. 2. To create regional schools and a superior school destined to create and to maintain a unity of methods. 3. To open these schools to the physical instructors of the army, to the monitors of the preparation for military service, and to the instructors of both sexes. 4. To direct the young toward outdoor exercises, giving them free places, playgrounds and vacation camps. 5. To encourage the work of private societies and to assist them freely. 6. To obtain (*a*) the simplification of school programs, which are frightfully overloaded and tend to destroy energy; (*b*) the introduction of a physical test in all examinations; (*c*) the institution of outdoor schools and open air or outdoor colonies for the physically abnormal children, and (*d*) the complete reorganization of school medical inspection. 7. To assure the employment of special professors of gymnastics. 8. To demand legislation providing for obligatory postgraduate instruction and the introduction of the eight-hour day (*la semaine anglaise*), so as not to injure the professional work of the adults, or their apprenticeship, or reduce the wages to which they may aspire. 9. To give a larger place in the training for military service to physical education and athletics, as a base for the future reorganization of the army and of the recruiting laws.

In order to solve these multiple problems there has been appointed a Comité national de propagande pour le développement de l'éducation physique et sportive, de l'hygiène sociale et de la rénovation de la race. This committee will cooperate closely with the public authorities, the universities, the faculties, the commercial centers, industrial centers, financial powers and the press.

Medical Treatment of Wounds of the Thorax

Dr. P. Delaunay reported to the Réunion médico-chirurgicale de la IV-e Armée forty-three cases of penetrating wounds of the chest caused by shell fragments and grenades, in eight of which there were associated lesions of *l'étage supérieur.* There were only five deaths in this whole series, four occurring almost immediately. The treatment of these cases was as follows: Treatment of the initial shock; no surgical intervention. The projectile was not sought, unless it was situated in the parietal wall and easily accessible. In cases of multiple wounds demanding immediate operations on limbs, resort was had to cocain anesthesia so as to avoid shock. As for hemothorax, pleural or pulmonary suture was not done, and the necropsy findings showed that any such intervention would have been a failure. In only one case was a late puncture made. In only four cases was a pleurotomy necessitated by pleural infection. Two patients who had a grave pleural septicemia, but were cured, seemed to be benefited by a fixation abscess. Although pleural complications were infrequent, pulmonary complications were quite numerous. In cases of pulmonary reactions manifested around the projectile tract, Delaunay applied pulmonary antisepsis: (1) the daily administration, by mouth, of a fluid mixture containing from 0.25 to 0.50 cg. of eucalyptol or 2 or 3 gm. of sodium thiosulphate (hyposulphite); (2) inhalation of eucalyptol spray; (3) intratracheal instillations,* daily, of 5 c.c. of 5 per cent. of eucalyptus in oil; these instillations are tolerated well, the patient lying on the injured side for some minutes afterward. The fever was lessened; the expectoration was rapidly and desirably modified. In all these conditions the patient was freed from

immediate danger, and if indications developed, could be operated on later.

At What Age Should Infants Be Vaccinated?

It is generally claimed that the new-born are not susceptible to vaccination; therefore, an official circular, dated Aug. 7, 1903, ordered that children should not be vaccinated before the age of 3 months. The application of this measure has proved very inconvenient. In the maternities, the women recently delivered stay in the institution only a few days after their delivery, and the new-born are thus taken away from these services without having been vaccinated. This renders it difficult to enforce the law. The obstetricians of the hospitals, notably Professor Pinard, have deliberately disregarded the law, and have been vaccinating all infants born in their service, during the first few days of life. This practice has yielded results completely at variance with previous beliefs; it makes it possible to protect all the little ones against variola. It is all the more urgent at this time because they can contract the disease precociously. As proof of this statement may be cited the recent case of a Paris child, 2 months of age, which was not vaccinated, and which succumbed to smallpox. Therefore, Professor Wurtz, chief of the Vaccine Institute, suggests that all children be vaccinated for the first time between the ages of 10 days and 3 months.

LONDON LETTER

LONDON, June 18, 1918.

The Calling Up of Physicians for Military Service

The government has issued a statement to the medical profession of the present position as regards physicians who are liable to military service. Physicians are required in the army for the practice of their ordinary profession, and it can only be under exceptional conditions that a physician will not be of more use to the army in this capacity than in any other in which he can there be employed. Physicians in the army always hold commissioned rank and have a higher rate of pay from the outset than most officers when first commissioned. It follows that the financial sacrifice entailed on a physician in joining the army is distinctly less than that required of most persons of corresponding pecuniary circumstances in civil life when called up. Through special arrangements made partly by their professional colleagues, and partly by public authorities and others employing physicians, those who have joined the army have usually received a higher proportion of their ordinary income, and have enjoyed a better prospect of returning to their former position, than have other citizens of like financial position. The number of physicians required by the military authorities for ministering to the needs of the army greatly exceeds the number ordinarily available for treating the same number of persons in the civil community; and thus recruiting from the medical profession has been, proportionally, much greater than from the community as a whole. Moreover, the burden of recruiting has up to now fallen especially on particular areas which contained large proportions of the younger men. These were, in many cases, the very areas which, under conditions existing prior to the war, had the smallest supply of physicians in proportion to population; and many such areas are important industrial centers now engaged in essential war industries.

In view of these considerations and of the fact that a certain minimal standard of medical service is vital to the civil community and therefore to the continuance of the national effort in the war, it was recognized early in the war that the interests, not more of the profession than of the community, required that bodies, both central and local, representative of the profession, should be closely associated with the government departments concerned in selecting physicians for military service. Thus physicians have had the great advantage that in the process of deciding whether they should be called up their circumstances have been assessed almost exclusively by representative bodies of their own profession. While recruiting was voluntary, certain central professional committees, the Central Medical War Committee in England and Wales, the Scottish Medical Service Emergency Committee in Scotland, and the Irish Medical War Committee in Ireland, were constituted bodies representative of the profession. There was subsequently added to the Central Medical War Committee the Committee of Reference, appointed by the Royal Colleges of Physicians of London, and of Surgeons of England, to deal with the question of the medical staffs of the London hospitals. Local medical committees were also formed, being elected by the local profession. When compulsory military service was enacted, the Army Council decided to recognize the professional committees to deal with cases of physicians claiming exemption on grounds other than that of conscientious objection, with power to make recommendations binding on the tribunals. Arrangements were concurrently made by the Army Council whereby physicians who did not exercise their right of claiming exemption would nevertheless not be called up until the appropriate professional committees advised this. Under these various arrangements, considerable numbers of physicians were called up and provision was made for carrying on their civil work. Successive representations made by the committees to the government indicated, however, increasing difficulty in carrying out this task, notwithstanding the fact that considerable numbers of physicians remained in many parts of the country in excess of the apparent needs of the civil community in those places. The factors producing this anomalous position were: (*a*) the fact that compulsion for military service extended only to those under the age of 41; (*b*) the great difference in different localities in the proportion of physicians under this age; (*c*) the fact that there was no obligation on physicians to undertake work in civil life as substitutes for younger physicians who might thus be made available for the army, and (*d*) the difficulty, under a voluntary system, of inducing a sufficient number of physicians over 41 to undertake substitution work (whether at a distance or in their immediate neighborhood) when necessary for the release of younger men. This apparent unwillingness was not due to want of patriotism or of *esprit de corps*. As so often happens in connection with purely voluntary service, the unwillingness of a small number to accept their fair share of a common burden made it impossible to bring into operation arrangements in which the majority would gladly have concurred could they have been made applicable to all. Presumably these conditions led the Central Medical War Committee and the Committee of Reference to pass, in December, 1916, a resolution approving of "the principle of mobilization of the medical profession apart from any question of general mobilization of the whole community, so that every physician shall give such service as he can when required to do so by the state." Matters then rapidly reached the stage at which no substantial additional number of physicians could be obtained for military service under existing powers and conditions. When the necessity arose for the passing of the recent military service act, it became necessary to raise the age of compulsory military service for physicians to 55 years. Under the regulations now issued, the committees, instead of being (as heretofore) technically advisory to tribunals, are constituted the tribunals by which applications by physicians for exemption will be considered. Applications for exemption may be lodged on the following grounds: (*a*) That it is expedient in the national interest that the physician, instead of being employed in military service, be engaged in other work in which he is habitually engaged or wishes to be engaged, or if he is being educated or trained for any work, that he should continue to be so educated or trained. (*b*) That serious hardship would ensue if he were called up for army service, owing to his exceptional financial or business obligations or domestic position. (*c*) Ill health or infirmity. (*d*) Conscientious objection to the undertaking of combatant service. The tribunals may grant absolute, conditional or temporary exemption on grounds of personal hardship or ill health, or of conscientious objection; but when the ground of exemption is occupational, only conditional exemptions will be granted, the condition being that the physician if not required for military service shall give his services to the civil community in such manner as the minister of national service deems best. He will be required to undertake work according to his age, state of health, the kind of work in which he is engaged and to which he is best fitted, and his financial circumstances. If some of the physicians in a particular district can be spared without substantial detriment to the population, they can be used to release for military service physicians in their own or in other districts. It will be no longer possible, therefore, for a physician to obtain exemption from military service on occupational grounds unless he undertakes to render his professional services in such place and under such conditions as the government thinks best. The probability is that most physicians will not be required to undertake additional work outside their own locality; but they must be prepared to accept the eventuality of military service or substitute service of any kind which the minister of national service after consultation with the Central Professional Committee deems best.

The German Bombing of Hospitals

The following are the official figures of the casualties due to the bombing of hospitals in France by the Germans from May 15 to June 1: killed: officers, 11; other ranks, 218; nursing staff, 13; civilians, 6; wounded: officers, 18; other ranks, 534; nursing staff, 18; civilians, 23, making a total of 841. During the period mentioned the hospitals were bombed seven times. A graphic account is given in the *Daily Telegraph* by Mr. Roland Hill, Canadian official correspondent, of the destruction of another Canadian hospital in an area never used for military purposes, the roofs being painted with great red crosses. One three-story wing, 200 yards long, was cut in half by a huge bomb and then caught fire. The operating room was working at high pressure, as some badly wounded patients had just been brought in, and the entire staff, physicians, nurses and patients, were buried under an avalanche of débris. In a few minutes the whole operating section was a flaming tomb, and bursting tubes of ether and hydrogen added to the ghastliness of the scene. Two other surgical teams fortunately had just gone off to their midnight supper, or the casualty list of surgeons would have been far heavier. The murderous intentions of the airmen is shown by the testimony of the matron that they used flares which lighted up everything. Not satisfied with dropping bombs, they flew low and used machine guns on the escaping refugees. During these horrors the nurses neither showed fear nor thought for themselves. The chaplain of one of the bombed hospitals told the king that they even refused to avail themselves of the protection of getting under the beds. They did their best to cheer and comfort the wounded, and gave them pillows with which to cover their heads. Many paid for their pluck by being maimed.

American Naval Hospital in London

The American Navy is to have its own hospital in London. For this purpose Mrs. Guest, wife of Captain Guest, M.P., has transferred to the American Red Cross her residence at 26 Park Lane, known as Alford House. Mrs. Guest before her marriage was Miss Amy Phipps of Pittsburgh. The house will contain fifty beds and will provide for both officers and men. The surgeons and attendants will be from the medical Corps of the United States Navy. On the official records the new institution will be known as "American Red Cross Hospital No. 25." It will be the twenty-fifth hospital which the American Red Cross has established in England. During the first three years of the war Mrs. Guest used her house as a private hospital for British officers.

The Reorganization of the Staff of the Metropolitan Hospitals

The minister of national service has approved a recommendation of the committee of reference that in order to provide more physicians for service in the army while at the same time safeguarding the interests of the civil community, the hospitals in the London area shall be arranged in groups, and that a sufficient staff of physicians shall be reserved to maintain the medical service of each group. Many physicians and surgeons are now serving at hospitals in various parts of London, involving long journeys, waste of time, and consequently loss of energy; and at the same time there are others both of military age and over that age who are capable of doing, and willing to do, more hospital work than they are now doing. Every member of the staff of a hospital will be asked to supply the committee of reference with a detailed statement of the hospital work and other work of a national character that he is now fulfilling, on a blank sent him for the purpose. This information will be tabulated and an analysis made of the amount of service rendered by each member of a hospital staff. From this analysis the committee will be in a position to advise the minister of national service as to the number of physicians of military age who must be considered indispensable to the civil community and who should in consequence be retained in civil practice. It may be necessary, in order to obtain the fullest benefit of a physician's service, to transfer his work from a hospital in one group to a hospital in another group as a temporary arrangement for the duration of the war. Each physician will be asked to sign a declaration that, if it is considered desirable in the national interest, he will agree to serve on the staff of any hospital or hospitals to which he may be assigned by the minister of national service on the recommendation of the committee, and at the same time to discontinue his services at any hospital where he may now be acting as a member of the staff. An appeal will be made to those members of hospital staffs who are over military age, to those who hold *à la suite* commissions in the army, and to those who have been medically rejected for service in the army or are otherwise excepted from liability under the military service acts, to assist by their cooperation in making this scheme a success.

The Loss of Potential Lives Due to the War

In a lecture at the Royal Institute of Public Health on "The Effects of the War as Shown in Vital Statistics," Sir Bernard Mallet said that in England and Wales the births registered in 1913 numbered 881,890. In 1915 they fell to 814,614. In 1916 there was a further fall to 780,520, the slightness of the fall from the previous year being due to the boom in marriages in 1915, when the number celebrated reached the "record" figure of 360,885. In 1917 the births fell to 668,346, a decline from the 1913 figure of 24 per cent. Up to the present we had lost in England and Wales in potential lives, on the standard of 1913, 650,000. He thought that it would be long before the birth rate reached even the figure that obtained before the war. Serious as this loss is to the coming generations in our country, there is reason to believe that we have suffered less than the other belligerents. In terms of percentages of loss on the prewar population, Germany has lost in potential lives the equivalent of 4.5 per cent. of its total prewar population, Austria 5 per cent., and Hungary 7 per cent. Sir Bernard Mallet calculated that the present war has cost the belligerent countries of Europe not less than 12½ millions of potential lives. While the war has filled the graves, it has emptied cradles. At the present time, every day that the war continues means the loss of 7,000 potential lives to the United Kingdom, France, Italy and the Central Empires. Race suicide among European peoples on a colossal scale is the outstanding result of German militarism.

Extension of Food Rationing

State control of the distribution and consumption of food is to be carried a stage farther by the introduction of national ration books (instead of the present cards). The new scheme coordinates and simplifies the national and local measures of rationing already in operation, and prepares the way for any necessary development. It also enables the minister of food to put into operation arrangements intended to secure the smoother working of the rationing machinery and to make provision for supplementing or varying the rations in cases in which the existing system applies unfairly. After July 14, there will be national rationing of sugar, butter, margarin, lard, butcher's meat, and bacon. Tea will not at present be rationed nationally, but local authorities may enforce their own schemes, and may also ration in their areas cheese or other articles. Provision is made for the rationing of jam if this should become necessary, owing to the partial failure of the fruit crop. An interchange of rations as between meat and fats will be allowed to vegetarians and Jews. The granting of supplementary rations of meat and fats to invalids will be decentralized, and the extra ration may be allowed in respect of illnesses other than tuberculosis and diabetes. Simplified methods of using ration coupons during temporary absences from home have been devised. Soldiers and sailors on leave will be provided with ration books for the period.

National Council for Combating Venereal Diseases

The third annual meeting of the National Council for Combating Venereal Diseases has been held. Lord Sydenham, who presided, said that the council had fifty-four branches. In the year, 1,323 lectures to civilians had been arranged by the branches, as well as 168 lectures by the central body in areas which the branches did not cover. A central council had been established in South Africa, and it was hoped that shortly Canada and every state in Australia would follow suit. In Bombay there was also an affiliated branch. The council is in communication with the war office on the difficult problem of demobilization. Mr. Hayes Fisher, president of the Local Government Board, said that 135 local authorities in this country had arranged for laboratories, and 136 had submitted schemes, under the regulations of which 127 had been approved. The hospitals treating these cases numbered 124, and all were provided with free supplies of arsphenamin for the treatment of syphilis by physicians. The returns for 1917, the first full year of the system, were not yet complete, but, so far as they went, they showed that 22,000 cases had been dealt with in these hospitals, and that there had been 197,000 visits to the outpatient departments.

Deaths

Lieut. William Gordon Herrington, M. R. C., U. S. Army, Nunez, Ga.; Medical College of Georgia, Augusta, 1912; aged 34; a Fellow of the American Medical Association; was killed in action in France, June 6. At a meeting of the medical officers of the Second Division, American Expeditionary Forces, held at La Ferte-sous-Jouarre, June 23, a committee of medical officers of the division presented the following resolutions:

Whereas: Our fellow officer and colleague, Lieut. William G. Herrington, junior surgeon of the 3rd Battalion of the 23rd U. S. Infantry, was killed in action, June 6, 1918, while, under heavy shell fire, he was attending wounded with utter disregard for his own safety, thus giving clear evidence of his marked courage and fearlessness, and so giving his life cheerfully and gloriously in the defense of his country. Be it resolved that: We, the Medical Officers of the Second Division of the American E. F., hereby express our deep appreciation of Lieut. Herrington's splendid display of loyalty and unselfishness in the performance of his duty.

Albert William Myers, Milwaukee; University of Pennsylvania, Philadelphia, 1898; aged 46; a Fellow of the American Medical Association; associate professor of pediatrics in Marquette University, Milwaukee; chief of the dispensary staff of the Milwaukee Infants' and Children's hospitals; for several years editor of the *Wisconsin Medical Journal;* widely known as a specialist on diseases of children; died at his home, July 2, from pneumonia.

Asst. Surg. Richard Franklin Hill, Lieut. (j. g.), U. S. N. R. F.; Hahnemann Medical College, Philadelphia, 1909; aged 30; who was detailed to duty at the Philadelphia Navy Yard, and from there was sent to the Naval Hospital on account of a nervous breakdown and finally to St. Elizabeth's Hospital, Washington, D. C.; committed suicide in the latter institution by hanging, July 2.

John Edwin Somers, Cambridge, Mass.; Bellevue Hospital Medical College, 1875; aged 67; a Fellow of the American Medical Association; for several years a member and chairman of library trustees of Cambridge; a member of the local school board; died in the Massachusetts General Hospital, July 4, from edema of the throat, following an operation three days before.

John Calvin Williams, What Cheer, Iowa; State University of Iowa, Iowa City, 1888; aged 73; a Fellow of the American Medical Association; a veteran of the Civil War; a member of the American Association of Railway Surgeons; a practitioner of What Cheer for forty-three years; died in the Mahaska County Hospital, July 2.

Richard Saunders Martin, Stuart, Va.; College of Physicians and Surgeons, Baltimore, 1881; aged 58; a Fellow of the American Medical Association; president of the state board of medical examiners; formerly secretary of the board; a member of the House of Delegates of the General Assembly; died in North Carolina, June 23.

John Latane Lewis, Bethesda, Md.; University of Maryland, Baltimore, 1888; aged 52; a Fellow of the American Medical Association; for several years secretary and treasurer, and in 1915 president of the Montgomery County Medical Society; died suddenly at his home, July 4.

Edwin ~~Curt~~ Abbott, Salinas and Monterey, Calif.; University of Michigan, Ann Arbor, 1871; aged 78; a Fellow of the American Medical Association; a veteran of the Civil War; died at his home in Monterey, June 11, from arteriosclerosis and glossopharyngeal paralysis.

Louis Peter Wineburg. Ligonier, Ind.; National Medical University Chicago, 1908; Bennett Medical College, Chicago, 1909; aged 39; a Fellow of the American Medical Association; died in the North Chicago Hospital, June 30, from tuberculous peritonitis.

John Hillyard Dancey, Capac, Mich.; Trinity Medical College, Toronto, 1896; aged 50; a member of the Michigan State Medical Society; for three terms mayor of Capac; a member of the board of auditors of St. Clair County; died at his home, June 27.

Claudius De Witt Bell, Chicago; Jenner Medical College, Chicago, 1907; aged 43; a Fellow of the American Medical Association; for ten years radiographer to Provident Hospital, Chicago; died in that institution, July 9, from lobar pneumonia.

William Dillon, Brooklyn; L. R. C. S., Ireland, 1884; licentiate Kings Queens College of Physicians, Dublin, 1885; aged 61; a Fellow of the American Medical Association; died at his home, June 26, from carcinoma of the liver.

John A. Lewis, Georgetown, Ky.; Medical College of Virginia, Richmond, 1868; aged 77; a Confederate veteran; for many years a trustee and president of the board of trustees of Georgetown College; died at his home, July 5.

John H. Saylor, Groveport, Ohio; University of Pennsylvania, Philadelphia, 1862; aged 82; surgeon of volunteers during the Civil War; died in Grant Hospital, Columbus, July 6, a week after a surgical operation.

Simon Leslie West, Philadelphia; Jefferson Medical College, 1868; aged 73; a Fellow of the American Medical Association; well-known as a specialist in roentgen-ray work; died at his home, June 22.

Edgar S. Adams, Garrison, Texas; Medical College of Georgia, Augusta, 1873; aged 71; a member of the State Medical Association of Texas; died in a sanatorium at Shreveport, La., June 24.

Louis Ovide Morasse, Putnam, Conn; University of Victoria College, Coburg, Ont., 1884; aged 57; a member of the Connecticut Medical Society; died at his home, June 30, from cirrhosis of the liver.

Katherine Hanks, Covington, Ky.; Laura Memorial Woman's Medical College, Cincinnati, 1896; aged 62; died at St. Elizabeth's Hospital, Covington, July 7, from malignant disease.

Edward Lawrence Burke, Culdesac, Idaho; University of Illinois, Chicago, 1900; aged 45; while returning from a professional call, May 18, died suddenly from heart disease.

Murray Pearson Davidson, Hanford, Wash.; Kentucky School of Medicine, Louisville, 1894; aged 46; died in Spokane, Wash., July 1, from disease of the heart and kidney.

Elias J. Reed, Leipsic, Ohio; Cincinnati College of Medicine and Surgery, 1872; aged 79; a veteran of the Civil War; died in the Lutheran Hospital, Fort Wayne, Ind., June 25.

Woodson Allen, Berkeley, Calif.; Eclectic Medical Institute, Cincinnati, 1884; aged 64; formerly a member of the local board of education; died at his home, June 30.

Louis Durant Mead, Byron Hot Springs, Calif.; College of Physicians and Surgeons in the City of New York, 1902; aged 43; died at his home, June 14, from paralysis.

Charles L. Townley, Cambridge Springs and Erie, Pa.; Western Reserve University, Cleveland, 1884; aged 65; died in his office in Erie, July 7, from acute gastritis.

John Philips Sivewright, Chatham, Ont.; Trinity Medical College, Toronto, 1876; aged 65; died in a drug store in Chatham, June 21, from cerebral hemorrhage.

George Preston Smiley, De Soto, Mo.; Washington University, St. Louis, 1863; Bellevue Hospital Medical College, 1877; aged 78; died at his home, June 15.

Walter E. Rukenbrodt, Brooklyn; Pulte Medical College, Cincinnati, 1875; aged 67; dropped dead in front of his home in Brooklyn from heart disease, June 22.

John L. Burke, Laclede, Mo.; Missouri Medical College, St. Louis, 1881; aged 71; a member of the Missouri State Medical Association; died at his home, June 20.

O. P. Hawthorne, Due West, S. C.; Reform Medical College, Macon, Ga., 1860; aged 82; a Confederate veteran; died at his home, May 9, from pneumonia.

Charles Fitch Ginn, Miamiesburg, Ohio; Cleveland Homeopathic Medical College, 1881; aged 70; was found dead in his office from heart disease, July 3.

Isaac K. Leming, Waldron, Ark.; St. Louis Eclectic Medical College, 1877; aged 65; died in a hospital in Kansas City, June 22, after a surgical operation.

William Hale, Dallas, Texas; University of Arkansas, Little Rock, 1892; aged 68; also a clergyman and a graduate in law; died at his home, June 28.

Frank C. Barto, St. Louis; Keokuk (Iowa) Medical College, 1896; aged 46; died in the Missouri Baptist Sanatorium, July 5, after a surgical operation.

Joseph F. Cross, Bellingham, Wash.; University of Pennsylvania, Philadelphia, 1856; aged 82; died at his home, July 6, from cerebral hemorrhage.

Benjamin F. Bailey, Keokuk, Iowa; Cleveland University of Medicine and Surgery, 1866; aged 82; died at his home, June 27, from senile debility.

Roger J. Levering, Snyderville, Pa. (license, continuous practice, Monroe County, Pa., 1882); aged 82; died at Stroudsburg, Pa., recently.

St. Clair Dunn, C. A. M. C., Gimli, Man.; Manitoba Medical College, Winnipeg, 1908; aged about 40; was killed in action in France, in May.

Thomas H. Kingsley, Bakersfield, Calif.; University of California, San Francisco, 1886; aged 65; died at a hospital in Bakersfield, June 28.

Colin McLarty, St. Thomas, Ont.; Trinity Medical College, Toronto, 1875; L. R. C. P., Edinburgh, 1876; aged 69; died at his home, June 25.

Wells Andrews, Chicago; Rush Medical College, 1876; aged 64; died in Garfield Park Hospital, Chicago, July 2, from cerebral hemorrhage.

Clinton B. Fisk Grantham, Stanberry, Mo.; Ensworth Medical College, St. Joseph Mo., 1890; aged 49; died at his home, about June 23.

Charles Alfred Tyrrell, New York City; Eclectic Medical College in the City of New York, 1900; aged 75; died at his home, July 2.

John Milton Major, Davenport, Iowa; a practitioner since 1848; aged 93; died in Davenport, June 3, from cerebral hemorrhage.

William Sidney Severance, Greenfield, Mass.; Eclectic Medical Institute, Cincinnati, 1853; aged 89; died at his home, July 1.

William B. Kyler, Benton, Ind. (license, Indiana, 1897); aged 72; died in Goshen, Ind., July 9, from cerebral hemorrhage.

Thomas Cato Kinmont, Hicksville, Ohio; University of Michigan, Ann Arbor, 1866; aged 86; died at his home, July 5.

Frank Ashton Packard, Kearney, Neb.; University of Vermont, Burlington, 1873; aged 65; died at his home, June 27.

John Goodwin Lane, Boston; University of Dublin, Ireland, 1876; aged 64; died at his home in South Boston, July 5.

Christian J. Simonson, Bowie, Ariz.; Barnes Medical College, St. Louis, 1910; aged 39; died at his home, June 6.

Samuel Toman, Dayton, Ohio; Medical College of Ohio, Cincinnati, 1882; aged 72; died at his home, June 28.

Marriages

ASST. SURG. ROYAL KNIGHT JOSLIN, U. S. N. R. F., Providence, R. I., on duty with the U. S. Marine Corps, at Quantico, Va., to Miss Beryl Higbee Kane of Newport, R. I., at Fredericksburg, Va., June 22.

LIEUT. ROBERT MARION PRATHER, M. R. C., U. S. Army, Beeville, Texas, on duty at Fort Riley, Kan., to Miss Delia J. Purifoy of Birmingham, Ala., at Dallas, Texas, May 28.

MAJOR EDGAR ERSKINE HUME, M. C., U. S. Army, commanding Base Hospital No. 102, Camp Beauregard, La., to Miss Mary Swigert Hendrick, both of Frankfort, Ky., July 1.

LIEUT. THERON OTIS WALKER, M. R. C., U. S. Army, Greenville, S. C., on duty at Camp Lee, Va., to Miss Janie Wood Hughes of Greer, S. C., April 24.

LIEUT. OSCAR EMIL NELSON, M. R. C., U. S. Army, Minneapolis, to Miss Helen Moore Stover of South Bend, Ind., June 25.

LIEUT. GEORGE HOWARD WILSON, M. R. C., U. S. Army, to Miss Gladys Lorene Harvey, both of Mount Carmel, Ill., June 24.

LIEUT. WALDO BEATTY FARNUM, M. R. C., U. S. Army, to Miss Grace Marion Fischer, both of New York City, July 2.

ASST. SURG. HENRY SACHTLEBEN KINLOCH, U. S. Navy, to Miss Hannah H. Brook, at Philadelphia, recently.

FREDERICK ADAMS WOOD, Brookline, Mass., to Miss Ellen Larned Payson of Chicago, in Boston, July 3.

CAPT. CHARLES WOLF, M. R. C., U. S. Army, to Miss Rosalie Zeamans, both of New York City, July 1.

MORRIS AARON FLOWER, Newark, N. J., to Miss Claire Francis Beam of Philadelphia, June 22.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

A rather expensively prepared advertising card (8 in. by 10 in.), of which the above is a photographic reproduction, was forwarded by a medical officer in France to the Surgeon-General's Office in Washington, which in turn sent it to THE JOURNAL. It is an interesting evidence of the attempt of a French "patent medicine" maker to exploit the English-speaking soldiers now in France. The card, an embossed affair with white letters on a dark green background, indicates that more money was spent on its mechanical production than on the brains that were used to turn the French quack's appeal into English. We question the advertising value of the card—at least insofar as it applies to the English-speaking soldiers from the Western Hemisphere. It lacks the finesse of the American venereal quack; no wide-awake American, even though suffering from "urinary duets" or even, conceivably, "quartettes" or "sextettes," would be caught by such a crude appeal.

PRESCRIPTION A-2851

A Dangerous Nostrum of the "Rheumatism Remedy" Type

In this department of THE JOURNAL of April 6 was reported the findings of the chemists of the Louisiana State Board of Health in analyses of several "patent medicines." One of the preparations was "Prescription A-2851" of which was said:

"This product, which is said to have been known earlier as 'Eimer and Amend's Rheumatic Remedy,' was analyzed by the state chemists of Louisiana, who reported that the preparation seemed to be essentially nothing more nor less than a low grade of sherry wine containing approximately 7½ per cent. of potassium iodid."

More than a month after this item appeared Eimer and Amend wrote to THE JOURNAL in part as follows:

"We assume that your intention in this column is to be fair. With this assumption in mind we call your attention to the fact that in your paragraph in reference to said prescription you have failed to mention the principal ingredient thereof. Such ingredient is wine of colchicum seed, which constitutes forty-five per cent. (45 per cent) of the contents. Also you have erroneously stated the per cent. of iodid therein contained which, instead of seven and one half per cent. is nine and three tenths per cent. (9.3 per cent.)."

From a leaflet in our files giving directions for the taking of Prescription A-2851 we find the following claims:

"It dissolves the calcareous deposits which cause the painful swelling at the joints and eliminates the uric acid from the system by its alterative action.

"It contains no opiates or narcotic drugs in any form."

The dose for this nostrum, according to the directions, is 1 dram (teaspoonful) three times a day. As, according to the manufacturers, 45 per cent. of this stuff consists of wine of colchicum seed, this means that each dram contains 27 minims of that drug. Thirty minims is considered a full dose. Wine of colchicum seed, or, for that matter, any preparation of colchicum, is so powerful and its toxicity so uncertain that its use in products of the home remedy type should be unhesitatingly condemned. As one author has said in discussing the dangers of colchicum poisoning: "The poisoning is one of the most painful, slow and hopeless poisonings known and a man taking as much as an ounce of the wine of the root or the seed is almost inevitably doomed to a terrible death." In this connection it is worth bearing in mind that the four ounce bottle of "Prescription A-2851" contains, according to the manufacturer's letter, about two ounces of wine of colchicum seed. Yet this stuff is put on the market with no warning of its toxic character. The presence of so potent a drug as colchicum in any nostrum of secret composition sold to, and taken indiscriminately by the public, is unwarranted. The least that Eimer and Amend can do if they insist on continuing to sell "Prescription A-2851" is to warn the public of its dangerous character by using the word poison on the label.

Correspondence

HOW TO SECURE CHEST EXPANSION

To the Editor:—In the section of The Journal of July 13, 1918, devoted to queries and answers regarding the Selective Service Regulations, Dr. O. L. Williamson of Marianna, Ark., asks what shall be done in the cases of many physically fit negroes who do not know how to expand the chest, and show no chest mobility equaling 2 inches.

I find that if one cannot obtain 2 inches on first trial, it is wise to go on with the rest of the examination. While auscultating the lungs, part of the time I tell the registrant to take deep breaths. The conversation runs somewhat as follows: "Take a deep breath." "Take a deeper breath." "Now breathe all that you can." After concluding this exercise, of which the registrant understands not the purpose, on taking the chest measurement one is very much surprised to find 2½ or 3 inches of expansion, when at first he could not obtain better than 1½ inches. Today I tried this method successfully on a negro and a Russian, both of the laboring class, robust physically, neither of whom could expand 2 inches on first trial. After the lung examination, during which I exacted several deep respirations, as detailed above, the mensuration of the negro was 3 inches and of the Russian, 2½ inches.

In this zone are examined more negroes than in any other one in this end of the state, there being 1,300 negro registrants, besides many examined by us for other boards, principally Southern, Texas especially, there having been a large influx from Dallas and Houston to this locality this year. As Dr. Williamson points out, many of them physically fit every way seem incapable of expanding sufficiently to meet the regulation requirements. The method I have suggested will solve the difficulty in most, if not all, of these cases.

H. P. Ashe, M.D., Pittsburgh.
Examiner, Local Board No. 2.

VARIOUS SUGGESTIONS

To the Editor:—It seems to me that for the period of the war, the graduate schools of the country should be requested to assume the duties of training physicians for the military service before going to camp, for the reason that there will be but little demand for polyclinic courses in medicine while the great struggle continues. On the other hand, undergraduate schools should confine their attention solely to the training of students who are candidates for the degree of Doctor of Medicine. Their depleted faculties cannot possibly do more than this without the risk of losing their dynamic and inspiring qualities.

Graduate schools with ample hospital facilities should also undertake for the duration of the war the work of reclaiming those young men who are rejected from military service on account of remedial defects. They should further seek to create permanent institutions or departments for the preparation of physicians for the military service after the war.

Finally, there should be an organization made up of members of the Medical Reserve Corps after hostilities cease, the chief aim and purpose of which should be to promote the scientific and practical interests of the military medical service. A serious attempt to inaugurate and maintain an era of activity and progress relating to military medicine and surgery in America would be timely, more especially since we cannot hope to be always so fortunate as regards the incumbent of the office of the Surgeon-General of the Army, as was the case when hostilities began. The interest of the members in the medical profession would not be one whit lessened by their new responsibilities.

James M. Anders, M.D., Philadelphia.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

VENEREAL DISEASES IN THE PRESENT WAR

To the Editor:—Please give me a list of references to articles on venereal diseases in the present war. If you answer in The Journal, please omit my name. Enquirer, Cincinnati.

Answer.—The following is a list of references on this subject:

Gaucher: Venereal Disease During War at Milltary Hospitals; *Bull. de l' Acad. de méd.*, Paris, March 28, 1916.

Ffrench: Treatment of Venereal Disease in English Army, *Practitioner*, London, May, 1916.

May: Prophylaxis of Venereal Diseases in English Army, *Practitioner*, London, May, 1916.

McGrigor: Treatment of Syphilis in English Army, *Practitioner*, London, May, 1916.

Tullidge: Venereal Disease in European Armies, *Mil. Surgeon*, July, 1916; Venereal Diseases and War, *Med. Rec.*, New York, Sept. 22, 1917.

Zweig: Treatment of Venereal Diseases in Army Hospital, *Deutsch. med. Wchnschr.*, Nov. 23, 1916.

Gaucher and Bizard: Syphilis after Two Years of War, *Bull. de l' Acad. de méd.*, Paris, Dec. 26, 1916; *Paris méd.*, Jan. 20, 1917.

Riggo, C. E.: Prevention of Venereal Diseases at Naval Training Station, Norfolk, Virginia, *U. S. Nav. Med. Bull.*, January, 1917.

Merz, H.: Skin Diseases in the Swiss Army, *Cor.-Bl. f. schweiz. Aerzte*, Jan. 27, 1917.

Bates, G.: Venereal Disease Problem from Military Standpoint, *Pub. Health Jour.*, February, 1917; Military Aspects of Venereal Diseases, *ibid.*, February, 1918.

Wettenhall, R. R.: Dermatology in Active Service with R. A. M. A., *Med. Jour. Australia*, March 3, 1917.

Pasteau, O., and Mallein E.: Genito-Urinary Dermatologic Centers in Army, *Arch. de méd. et pharm. mil.*, April, 1917.

Gougerot, H.: Skin Diseases of War, *Rev. de méd.*, May-June, 1916.

Wolbarst, A. L.: Prevention of Venereal Diseases in Our Military Forces, *Med. Rec.*, New York, April 28, 1917.

Gaudy, J.: Venereal Diseases in the Army, *Arch. méd. belges*, June, 1917.

Moscati, G.: Syphilis in the Army and its Prophylaxis, *Riforma med.*, Aug. 11, 1917.

Cole, H. N.: Prophylaxis of Venereal Disease in Army, *Cleveland Med. Jour.* September, 1917.

Lyster, W.: Venereal Diseases and the New Army, The Journal, Oct. 13, 1917, p. 1257.

Botti, A.: Venereal Diseases and War, *Riforma Med.*, Jan. 5, 1918.

Callender, G. R.: Problem of Venereal Disease in the Army, *Mil. Surgeon*, January, 1918.

Clark, J. B.: Straddle Stand for Prophylaxis and Treatment of Venereal Diseases in the Army, The Journal, Jan. 12, 1918, p. 90.

Ebert, R. G.: Problem of Venereal Disease in the Army, *Mil. Surgeon*, January, 1918.

Peacock, A. H.: Problem of Venereal Disease in the Army, *Northwest Med.*, January, 1918.

Spencer, J. C.: Venereal Diseases in the Army, *California State Jour. Med.*, January, 1918.

Hazen, H. H.: War and Syphilis, *Am. Jour. Syphilis*, January, 1918; Dermatology and War, *Med. and Surg.*, February, 1918.

Gorgas, W. C.: Venereal Diseases and War, *Am. Jour. Pub. Health*, February, 1918.
Macleod, J. M. H.: Dermatology and War, *Practitioner*, London, February, 1918.
Pinard, M.: Venereal and Skin Diseases in a Battalion, *Paris méd.*, Feb. 2, 1918.
Lindsay, H. C. L.: Dermatology in the Army, *New York Med. Jour.*, March 9, 1918.
Mowry, A. E.: Prevention and Control of Venereal Diseases in the Army, *Illinois Med. Jour.*, March, 1918.
Anderson, G. G.: Diagnosis and Treatment of Syphilis on Active Service, *Med. Jour. Australia*, March 30, 1918.
McKie, E. M.: Venereal Diseases—Army Viewpoint, *Boston Med. and Surg. Jour.*, April 4, 1918.
Cunningham, W. P.: Syphilis and War, *New York Med. Jour.*, April 6, 1918.
Noguchi, H.: Method of Facilitating Serum Diagnosis of Syphilis under War Conditions, THE JOURNAL, April 20, 1918, p. 1157.

THE DAY

This poem was written by a railroad porter in England some two years ago. It has been printed many times, in many countries, but it will bear repeating, especially at this time. One of the popular toasts at military banquets in Germany used to be *Der Tag*—the day when Germany would make an actuality of another toast, *Deutschland über Alles*.

You boasted the Day, and you toasted the Day,
And now the day has come.
Blasphemer, braggart and coward all,
Little you reck of the numbing ball,
The blasting shell, or the "white arm's" fall,
As they speed poor humans home.

You spied for the Day, you lied for the Day,
And woke the Day's red spleen.
Monster, who asked God's aid Divine,
Then strewed his seas with the ghastly mine;
Not all the waters of the Rhine
Can wash your foul hands clean.

You dreamed for the Day, and you schemed for the Day;
Watch how the day will go.
Slayer of age and youth and prime
(Defenseless slain for never a crime),
You are steeped in blood as a hog in slime,
False friend and cowardly foe.

You have sown for the Day, you have grown for the Day;
Yours is the harvest red.
Can you hear the groans and the awful cries?
Can you see the heap of slain that lies,
And sightless, turned to the flame-split skies,
The glassy eyes of the dead?

You have wronged for the Day, you have longed for the Day
That lit the awful flame.
'Tis nothing to you that hill and plain
Yield sheaves of dead men amid the grain;
And widows mourn for their loved ones slain
And mothers curse your name.

But after the Day there's a price to pay
For the sleepers under the sod.
And He you have mocked for many a day—
Listen, and hear what He has to say:
"Vengeance is Mine, I will repay!"
What can you say to God?

MATERIALS FOR NOGUCHI MODIFICATION OF WASSERMANN TEST

To the Editor:—Please answer this in Queries and Minor Notes: Where can one obtain small quantities in bulk, monthly, of acetone-insoluble lipoid antigen, and antihuman hemolytic amboceptor for the Noguchi Wassermann test? M. E. MILES, M.D., Boulder, Colo.

ANSWER.—We assume that the materials required for the Noguchi modification of the Wassermann test are wanted by our correspondent. According to New and Nonofficial Remedies, 1918, p. 353, these may be obtained from the H. K. Mulford Company, Philadelphia.

NEED FOR THE GENERAL PRACTITIONER IN THE ARMY

To the Editor:—Kindly advise me what would be the proper place in the service for the general practitioner, the man 45 years of age, who has worked night and day for years but is in splendid physical condition and willing to join the Army. The impression prevails here that men under 35 years of age and specialists are needed, but that there is no place for the others who have spent their time in general practice. X. Y. Z.

ANSWER.—This is a wrong impression. There is need in the Medical Department for every physician who can qualify physically, morally and professionally. In many departments of the service the general practitioner is a far better man for the work than the specialist.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 3. Sec., Dr. L. P. Dawes, Juneau.

NURSES CANNOT LEGALLY GIVE ANESTHETICS IN WEST VIRGINIA

A decision recently handed down by the Attorney-General of West Virginia holds that the giving of anesthetics constitutes the practice of medicine, and that no person, nurse or otherwise, can legally give anesthetics unless he or she is duly licensed to practice medicine. The decision is as follows:

Under the law, the right to administer drugs used in surgical anesthesia by a person not a licensed physician would not depend upon either the question of preparation by study or otherwise, or compensation or fees charged for services, but upon the question as to whether or not the administration of such drugs would constitute the "practice of medicine and surgery" within the meaning of the statutory definition. Is the administration of the anesthetic preparatory to a surgical operation an integral part of the operation itself? I think it is. There are certain things preparatory to a surgical operation necessary to be done that can be trusted to nurses and attendants which are not really a part of the operation itself, and require no great amount of skill to perform. However, an anesthetic is a substance, the unskilful handling of which is dangerous to human life. The person undergoing the operation places himself absolutely under the control of the person administering the anesthetic. This is the first dangerous step in the operation; the first one requiring peculiar skill and knowledge. The operating surgeon concentrates his attention to the cutting part of the operation and cannot well exercise careful supervision over the person administering the anesthetic. The anesthetic is such a subtle and dangerous agent that the most careful supervision on the part of the operating physician does not remove the danger of the anesthetic in the hands of an unskilful person.

If it be held that the administration of anesthetics does not constitute the "practice of medicine and surgery," then the fitness of a person to administer them is determined in each case by the operating surgeon. He would constitute the examining tribunal and might choose either a skilled or unskilled person to perform a recognized dangerous part of the operation. I do not believe the legislature ever intended that any person not a licensed physician should be permitted to administer drugs used in surgical anesthesia, even though such person may act under the direction and in the presence of a licensed physician and surgeon.

From this opinion it appears that under no circumstances can any person, whether trained nurse or otherwise, administer an anesthetic during a surgical operation unless such person has received a certificate entitling him to practice medicine and surgery. It does not seem likely that the opinion of the Attorney-General would render illegal the administration of anesthetics in obstetrics, since in such cases only partial anesthesia is sought in the great majority of cases. If complete anesthesia becomes necessary, it seems that no one except a licensed physician can legally administer the anesthetic.

Decisions by attorney-generals of the various states in regard to the giving of anesthetics by nurses are thus far as follows: In Ohio and West Virginia it has been decided that the giving of anesthetics constitutes the "practice of medicine" and requires that the person who gives it must be duly licensed to practice. In Pennsylvania and Wisconsin the decisions were that the nurse could be permitted to give anesthetics. In Kentucky the lower court decided against the nurse, but the higher court reversed the decision so that Kentucky now lines up with Pennsylvania and Wisconsin. Decisions in other states will be watched with interest.

California February Examination

Dr. C. B. Pinkham, secretary of the Board of Medical Examiners of California, reports the oral and written examination held at Los Angeles, Feb. 19-21, 1918. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 86 candidates admitted to the physician's and surgeon's examination, 53, including 40 osteopaths, passed, and 33, including 32 osteopaths, failed. Three candidates were granted osteo-

pathic licenses. One drugless practitioner failed. Thirty-four physicians were licensed through reciprocity. Three candidates were granted osteopathic reciprocity licenses. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
California Eclectic Medical College		(1915)	*
College of Phys. and Surg., San Francisco		(1917)	76.3
Hahnemann Medical College of the Pacific		(1917)	80.9
Leland Stanford Junior University		(1917)	86.4
Chicago College of Medicine and Surgery		(1917)	85.7
Loyola University		(1917)	82.7
University of Illinois	(1914) 95.1;	(1916)	83.4
State University of Iowa College of Med.		(1917)	82.2
John A. Creighton Medical College	(1913) 75;	(1916)	83.5
Albany Medical College		(1904)	82.9
University of Buffalo		(1917)	82.9
	FAILED		
National School of Medicine, Mexico		(1911)	65.3

* No grade given.

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, San Francisco		(1904)	Nevada
George Washington University	(1906) Wisconsin;	(1913)	Washington
Bennett Medical College		(1915)	Illinois
Chicago College of Medicine and Surgery		(1916)	Wyoming
College of Phys. and Surg., Chicago		(1883)	Colorado
	(1902) Iowa;	(1903)	Illinois
Dunham Medical College		(1901)	Washington
Hahnemann Med. Coll. and Hosp. of Chicago		(1888)	Illinois
		(1896)	Minnesota
Northwestern University	(1898) Kansas;	(1901)	Illinois;
		(1901)	Iowa
Northwestern University Woman's Med. School		(1900)	Missouri
Rush Medical College		(1890)	Minnesota
Indiana University		(1911)	Indiana
State University of Iowa College of Medicine		(1909)	Iowa
Kentucky School of Medicine of Louisville		(1898)	Arizona
Harvard University		(1902)	New York
Detroit Homeopathic Medical College		(1872)	Virginia
Hamline University		(1905)	Minnesota
University of Minnesota, Coll. of Homeo. M. & S.		(1907)	New York
American Medical College		(1912)	Hawaii
St. Louis College of Phys. and Surg.		(1901)	Wyoming
John A. Creighton Medical College	(1899) Nebraska;	(1906)	Iowa
Dartmouth Medical School		(1909)	New Hamp.
Columbia University		(1906)	New York
Hahnemann Medical Coll. and Hosp. of Philadelphia		(1911)	New York
University of Pennsylvania	(1902)	(1905)	Penna.
University of Texas		(1915)	New York
University of St. Vladimira, Russia		(1904)	Illinois

Alabama January Examination

Dr. S. W. Welch, secretary of the Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, Jan. 8-11, 1918. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, of whom 6 passed and 2 failed. One candidate was licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College	1914) 78.6;	(1915)	75.8
University of Alabama	(1917) 75.1, 76.5		81.1
Chicago College of Medicine and Surgery		(1917)	75.3
	FAILED		
Meharry Medical College		(1915)	69.7
Vanderbilt University		(1917)	73

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Georgia		(1901)	Georgia

Kentucky May Examination

Dr. J. N. McCormack, secretary of the State Board of Health of Kentucky, reports the written examination held at Louisville, May 28-30, 1918. The examination covered 10 subjects and included 100 questions. An average of 70 per cent. was required to pass. Of the 37 candidates examined, 34, including 3 osteopaths, passed, and 3, including 1 chiropractor, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Med and Surg		(1918)	79
Louisville National Medical College		(1912)	72
University of Louisville	(1907) 87; (1912) 70; (1917) (1918) 78, 81, 81, 82, 83, 83, 83, 85, 86, 87, 89, 90, 91.		79
Eclectic Medical College	(1918) 76, 77, 77, 88, 90.		
Medical College of Ohio		(1890)	93
Meharry Medical College	(1917) 71; (1918) 73, 77, 84, 85, 86.		
Vanderbilt University		(1917)	77
	FAILED		
Meharry Medical College		(1917) 66; (1918)	51

Book Notices

DETAILS OF MILITARY MEDICAL ADMINISTRATION. By Joseph H. Ford, B.S., A.M., M.D., Colonel, Medical Corps, U. S. Army. Published with the approval of the Surgeon-General, U. S. Army. Cloth. Price, $5 net. Pp. 741, with 30 illustrations. Phiadelphia: P. Blakiston's Son & Co., 1918.

This book is prefaced with a letter from Surgeon-General Gorgas saying, "I hope every medical officer in our service will furnish himself with a copy." The book is a veritable encyclopedia on the duties of the medical officer. It is based on a thorough knowledge of the work of our own Medical Department, of published literature as to the duties of the medical officer, and of service in Europe, since the author had the opportunity of making first hand observations in Europe before the present war as well as since. It serves to bring together much information scattered through official publications. Every section contains numerous quotations from official orders and publications. The various chapters deal with all the activities in which the Army medical officer may be engaged. A special chapter relates to public health service and deals with the sanitation of civilian communities; another important chapter on voluntary aid concerns the work of the Red Cross. A most extensive appendix quotes numerous recent general orders relative to paper work, the war risk insurance, and illustrates numerous blanks and forms correctly filled out.

CRIMINOLOGY. By Maurice Parmelee, Ph.D. Cloth. Price, $2. Pp. 52. New York: The Macmillan Company, 1918.

With the recent rapid advance in the biologic, psychologic and social sciences, on which criminology is based, there is now available a much larger fund of knowledge from which to construct a criminologic theory and to devise a practical program of dealing with the problem of the criminal. It is obvious that crime cannot be attributed to any one group of causes. The author has attempted a comprehensive survey of the whole field of criminology under the headings of the theory of the nature and evolution of crime; criminal sociology; criminal anthropology; criminal psychology; criminal jurisprudence, and penology. In his scheme of penal treatment he says that the problem is fundamentally one of the manipulation of human character, and that with the exception of the rearing of the young there can be no better opportunity for endeavoring to develop human character along useful social lines. Penal institutions as they now exist fall far short of the ideal, and many criminals are more dangerous to society when they leave the prisons than when they entered. Police stations, local jails and other places of temporary detention are not penal institutions, and they should be sharply differentiated from such institutions, and the character of the confinement and treatment in them should accord with that view. Local jails are still needed for short term sentences, but as short sentences are gradually abolished and other minor penalties introduced, local jails will disappear. Those guilty of serious crimes or of persistent recidivism should be first sent to reception and observation prisons where they should be subject to the most careful study and observation by experts conversant with modern methods of studying aberrant human nature, the psychologist, the psychiatrist, the criminologist, the sociologist, by whom some form of penal treatment other than imprisonment may be found desirable. Penal institutions will still, however, have to conform to about four types: industrial reform schools and reformatories; industrial farm colonies; asylums for the insane, the feebleminded and the inebriates, and penitentiaries for the incorrigible. Release and after-care are important in the scheme, as are substitutes for imprisonment, such as labor on roads, farms, etc., and restitution and reparation, which the author thinks have an excellent psychologic and moral effect on the offender. Of the sterilization of the criminal, for which some states have provided by legislation, the author says that one of the principal motives back of this sort of legislation has been to prevent criminals from reproducing themselves on the theory that their criminality will be transmitted to the offspring. It is obvious, he says, that

criminality per se cannot be inherited, and it is hardly justifiable to use mutilation as a form of punishment; but it is legitimate to impose sterilization when an individual has an unquestionably hereditary trait which is dangerous to society. Most of the legislation on the subject in this country violates this scientific principle and according to the author should be revised. Especially interesting sections of the book concern evolutive crime and democracy, and the prevention of crime.

LESSONS FROM THE ENEMY. How Germany Cares for Her War Disabled. By John R. McDill, M.D., F.A.C.S., Major, Medical Reserve Corps, U. S. Army. Medical War Manual No. 5. Authorized by the Secretary of War and under the Supervision of the Surgeon-General and the Council of National Defense. Leather. Price, $1.50. Pp. 262, with 145 illustrations. Philadelphia: Lea & Febiger, 1918.

Dr. John R. McDill arrived in Germany, June 17, 1916, as director of a unit sent to the Central Powers by the American Physicians' Expeditions Committee of New York, and was assigned first to Coblenz on the Rhine, and after one month to Fortress Graudenz in the East. After his arrival he obtained permission from the German military authorities to study their methods for publication in the United States. The results of these studies are embodied in this book. In the foreword the author says, "All through this narrative stands out the fact that preparation for war has been going on in Germany for many years not only by the army, but by numerous civil organizations preparing to lend essential assistance when a state of war occurred." The book covers the whole aspect of the medical service of Germany in the war, with chapters on the German medical military organization, administrative methods of the sanitary service and the base hospitals, covering volunteer nursing and welfare work, and coming finally to rehabilitation and reeducation, national and communal war relief work and social service. All of the illustrations are clear and instructive. The following sentence from the foreword is especially interesting:

> The common people of Germany at least, although still physically fit, are suffering from a hopeless malady "Friedensehnsucht," or longing for peace; but as time passes and their rulers demand more and yet more sacrifices and their hope is dashed as soon as it is born, their condition is so desperate that they are benumbed and are finding out that it is not so hard to die after one gets used to it.

A SYSTEMATIC COURSE OF QUALITATIVE CHEMICAL ANALYSIS OF INORGANIC AND ORGANIC SUBSTANCE. With explanatory notes. By Henry W. Schimpf, Ph.G., M.D., Professor of Analytical Chemistry in the Brooklyn College of Pharmacy. Third Edition. Cloth. Price, $1.50. Pp. 187. New York: John Wiley & Sons, 1917.

Any one who owns a previous edition of this book will gain little additional information from the later "revised" edition, which still contains much matter that is decidedly out of date. The student using this textbook alone would have no conception of the important subject of ionization. In fact, there is reflected a lack of knowledge on this phase—or carelessness—for otherwise it would be difficult to conceive why such mistakes should be made as that ammonium chlorid added to a solution of ammonium hydroxid and magnesium chlorid form the double salt $MgCl_2.2NH_4Cl$ (p. 59); or that manganese forms a soluble hydroxid, soluble in an excess of NH_4OH (p. 59); or that silver chlorid and ammonium hydroxid form argentic *amin* (p. 30). The book abounds in chemical equations, but they are for the most part misleading in that they infer that the reactions occur as they are given on paper, when as a matter of fact, they do not; some of the mistakes are beyond presumptional explanation.

MEDICAL SERVICE AT THE FRONT. By Lieut.-Col. John McCombe, C. A. M. C., and Capt. A. F. Menzies, M. C., C. A. M. C. Leather. Price, $1.25. Pp. 128, with illustrations. Philadelphia: Lea & Febiger, 1918.

This book is an outline of the Canadian methods of organization and administration in the war. The several chapters concern a division in the front line, the regimental medical officer, four chapters on the work of the field ambulance, the assistant director of the medical services, the corps, medical arrangements for cavalry, and the casualty clearing station. Surgeon-General J. F. Fotheringham of Canada vouches for the accuracy of the book. It is quite brief, its contents corresponding to about thirty-two pages of THE JOURNAL, about one fifth of that space occupied by the diagrams.

Medicolegal

Validity of Agreement Not to Practice in a Certain Locality

(*Scott v. Asbury* (*Mo.*), *198 S. W. R. 1131*)

The Kansas City (Mo.) Court of Appeals affirms a judgment in favor of the plaintiff in this suit to enjoin the defendant from practicing the profession of medicine and surgery within the territory covered by a circle having a radius of 10 miles with a certain place as its center, in violation of his executed oral contract with the plaintiff. The court says that the defendant was practicing in said place and vicinity, and lived in a residence the title to which was in his wife. Desiring to leave there and remove to the South, he advertised for sale his home and practice, in response to which the plaintiff went there. Negotiations were entered into between them. The defendant promised that if the plaintiff would become the purchaser of the home at $3,500, he would turn over his medical practice to him and leave there, and would not thereafter resume practice within 10 miles thereof. This offer was accepted and complied with on the plaintiff's part. A deed was executed by the defendant and his wife to the plaintiff conveying the home to the latter, possession was turned over to him, and the defendant publicly installed him as his successor in the practice of medicine and then removed to Louisiana. The deed to the home was a straight-out conveyance thereof for a recited consideration of $3,500, and said nothing about any agreement in reference to the medical practice. Before the deed was prepared, the plaintiff suggested that their contract be put in writing; but, on being assured that it was not necessary, as the defendant was going to Louisiana at once, the plaintiff did not further insist on the reduction of their contract to writing. But in a few months the defendant returned to his former home town and began practicing there.

The defendant's first contention was that there was no consideration for that part of the agreement relating to his further practicing at said place, but clearly this was not tenable, since the refraining by him from further practice there was one of the effective inducements offered to the plaintiff to become the purchaser of the home, and was a part of the consideration for that purchase.

The defendant's other contention was that, when the deed to the home was executed, the prior oral agreement, with all of its terms and provisions, became merged into the conveyance, and rendered inadmissible oral proof of the terms of the contract between the parties. But the rule referred to had no application to the facts of this case. The original contract between the parties was oral and entire, and the execution of the deed was not a reduction of the contract to writing, but was done only in order to perform a part of the contract, namely, to pass the title to the house over to the plaintiff. The deed recited nothing in relation to the agreement concerning the medical practice, nor did it contain anything to show that the contract between the parties was therein sought or intended to be reduced to writing. Nor were the other terms of the contract of a nature sufficiently related to the subject-matter of a conveyance of real estate to require their inclusion in the deed as one of the necessary elements thereof or to make the terms of the contract inherently in conflict with the terms of the deed. Hence the oral proof of the contract and of its terms in no way tended to vary, add to or contradict the deed. The court did not err in admitting evidence of the contract between the parties.

Bases for Recovery of Compensation

(*Succession of Pons* (*La.*), *77 So. R. 515*)

The Supreme Court of Louisiana says that an attorney named Fourchy and his associates engaged the services of physicians named O'Hara, Pothier and Mioton as expert alienists, to aid them in their defense of a suit then pending, under a written contract reading, as to the terms, as follows:

"In consideration of said employment, said Fourchy, agent and attorney in fact, agrees to pay to said O'Hara, Pothier

and Mioton the sum of $1,200, to be divided between them, and, in the event that said interdiction proceedings are dismissed by judgment in favor of said Mrs. Pons, then the said . . . agent . . . agrees to pay . . . an additional sum of $1,800 to be divided between them. In case said interdiction proceedings are abandoned by plaintiffs, . . . then the sum of $3,000 shall thereupon become due and payable, or, in case said . . . proceedings shall be decided against said Mrs. Pons by final decree or judgment declaring her interdict, the sum of $1,200 shall be . . . payable, when the judgment shall become final."

The three physicians claimed $3,000 for their services as experts; but, the interdiction proceedings having abated by reason of the death of the defendant, the court is of the opinion that the "Messrs. Doctors" were entitled to but $1,200, to be divided between them, and that the $1,500 allowed by the judgment appealed from should be reduced to that amount.

Where the services of specialists are engaged under a contract that they shall be paid a certain sum in the event of certain specified possible happenings and a larger amount in the event of other happenings, they can recover only according to their contract, and, if the specified possible happenings do not happen, cannot recover the larger amount.

Again, the court says that Dr. O'Hara was called into consultation by another physician who had been placed in charge of Mrs. Pons and that he made an estimated number of visits for which he claimed $1,000, at the rate of $10 per visit. The judgment appealed from allowed him $500 for his services in that capacity, and the court finds no sufficient reason for making any change in that amount.

One who seeks to recover for medical services on the basis of consultations at so much per consultation or per visit should be able to show how many consultations or visits were had or made.

What Physicians May and May Not Testify To

(Klein v. Prudential Insurance Company of America (N. Y.), 117 N. E. R. 942)

The Court of Appeals of New York holds that, in this action on a life insurance policy decided in favor of the defendant, it was not error to receive the testimony of the physician who attended the applicant for insurance claimed to be insured, February 13, the day before the first premium on the policy was paid in full, that he was then sick, though the court says that in any case the evidence that the applicant was sick on the day before he was taken to the hospital (February 14) appeared almost, if not entirely, beyond controversy by testimony other than that of the attending physician. The prohibition against a physician giving evidence of matters within his knowledge, relating to a patient, the court says, is statutory. It is confined to information acquired in attending a patient in a professional capacity and which is necessary to enable him to act in that capacity (Code of Civil Procedure, Section 834). The code section is not intended to prevent a person from testifying to such ordinary incidents and facts as are plain to the observation of any one without expert or professional knowledge, and without tacitly or otherwise inviting or receiving confidences by which the incidents and facts are or may be brought to light and obtained. When the information obtained by a physician extends to the existence of an ailment, although not the subject of his attendance or treatment, but is acquired through an examination of the patient in attending him in a professional capacity, and the discovery of which was a necessary incident to the investigation made to enable him to act in his professional capacity, it is within the language and purpose of the code prohibition.

The plaintiff beneficiary's reference, in her certificate as a part of the proofs of death, to the certificate of the hospital physician, made his certificate admissible in evidence as an admission against her for what it was worth. If it appeared therefrom to have been based in whole or in part on hearsay evidence, or on confidential communications made to him by the patient, and the plaintiff desired to prevent its being considered in evidence, she should have objected to it on that ground, or have made a motion to strike it from the record.

Society Proceedings

AMERICAN PEDIATRIC SOCIETY

Thirtieth Annual Meeting, held in Lenox, Mass., May 27-29, 1918

Dr. L. E. LaFetra, New York, in the Chair

Hemoptysis Following Exploratory Puncture of Chest

Dr. Augustus Caille, New York: In an infant admitted with a diagnosis of lobar pneumonia, a history of symptoms of respiratory embarrassment dating back two weeks, moribund and cyanotic at the time of admission, percussion revealed flatness over both lungs posteriorly and absence of pectoral fremitus below the scapula. To make sure of the absence of pus or serum, an aspirating needle was pushed into the seventh interspace for about three-quarters inch. This procedure was followed by a feeble coughing effort and by brisk hemorrhage from the mouth, and in less than a minute life was extinct. At necropsy the foramen ovale was found patent. Beneath the leaflet of the mitral valve there was an opening in the intraventricular septum. The cardiac musculature was of about the same thickness on the right as on the left side. There was distinct consolidation of both lungs, and marked congestion of the entire lung. No puncture of a large blood vessel could be found, and there was no laceration of the lung tissue. In acute cases in which puncture seems to be indicated, the introduction of an exploratory needle into the thorax containing a highly congested lung is attended with some degree of risk when cyanosis and other characteristic signs point to cardiac or circulatory failure.

Breath-Holding Attacks

Dr. I. A. Abt, Chicago: Breath holding manifests no true laryngeal spasm. The breathing is restive, and stops suddenly in the midst of a crying attack; but there is no inspiratory spasm. The child works himself into a rage, cries for a time, and then suddenly stops, finding it impossible for a brief period to make any further sound. The child becomes cyanotic or pale, his body becomes rigid, the eyes turn and become set, and it appears for a moment that the child is asphyxiated. The attack usually lasts for a few seconds and then disappears. Breath-holding attacks differ from minor epilepsy in that they follow immediately on severe crying, excitement or anger, while epileptic attacks occur suddenly in the midst of quiet play or even during sleep. Biting of the tongue, which occurs in epilepsy, does not occur in breath holding. Breath holding usually occurs in neuropathic children, and treatment should be directed toward the general management of the nervous child. When an attack occurs there should be no fussiness or consternation evinced by the mother or nurse. The patient should be shown in no uncertain manner that any repetition of the attack will meet harsh if not painful measures.

DISCUSSION

Dr. Rowland G. Freeman, New York: I had a case in which the attacks were sometimes prolonged until the child became unconscious. While the child had a cold it got one of these breath-holding attacks, became unconscious and died without regaining consciousness.

Dr. Percival J. Eaton, Pittsburgh: Of a family of four boys, three were subject to these spasms. The parents of these boys carried out the treatment Dr. Abt suggests. I have found that by forcing the mouth open, drawing the tongue out, and then pushing the cheeks in, some reflex is excited which relieves the spasm of the glottis.

Dr. Henry Heiman, New York: There are borderline cases which present a condition very much like spasmophilia, or Erb's phenomena.

Dr. I. A. Abt, Chicago: None of these cases of breath holding occurred until the second year of life, whereas spasmophilia manifests itself earlier. These children were, first of all, ill tempered, had short crying spells, and would then develop the breath-holding attack.

Death From Cardiac Failure in Children, Unexplained by Postmortem Examination

DR. JOHN HOWLAND, Baltimore: Several cases came under my observation which ended in death with marked evidence of circulatory failure, but with no changes to be made out other than great cardiac hypertrophy and more or less dilatation. The hypertrophy was the striking feature. The musculature was intact. None of the conditions with which cardiac hypertrophy occurs were present in any of these cases. The myocardium was normal. There is reason for believing that as the result of some nervous or muscular disturbance, incoordinate action of the heart results.

DISCUSSION

DR. CHARLES HUNTER DUNN, Boston: I saw a baby with marked cyanosis and cardiac insufficiency. A diagnosis of double pleurisy and hydrothorax was made. The roentgenogram disclosed that the condition was cardiac, and it was thought that we were dealing with a pericarditis with effusion. The outline of the heart was very large, but the heart muscle was normal and there was nothing to explain the hypertrophy.

Infantilism: Two Cases Illustrating the Brissaud and Frölich Types, Respectively

DR. J. P. CROZER GRIFFITH, Philadelphia: A girl, at the age of 1½ years, had an attack of whooping cough and since that time is said not to have grown physically, although mentally the parents think she is normal. The extremities are short for the size of the thorax and the legs are slightly bowed. The child's weight is 20 pounds, the normal weight for her age being 49 pounds. Her height is 29 inches, the normal for her age being 45 inches. The thyroid was not palpable and this region of the neck did not seem as full as in normal children. The eyes are somewhat apart, the chest short and full, and there are slight subcutaneous fatty deposits in the supraspinous fossa. The abdomen is much distended, resulting in a distinct costal flare, and producing a compensatory lordosis of the lumbar spine. The temperature averaged somewhat below normal. The child was given thyroid medication and, while there was some increase in weight and measurement, there was no very material change in her condition.

A boy, aged 11 years, was admitted to the hospital for excessive obesity. The tendency to an undue deposit of fat had been first noticed when the child was 11 months of age. This had been gradually progressive and did not seem to be influenced by diet. The boy's weight was 251 pounds, the normal for his age being 70 pounds. The boy walked with a distinct limp, his abdomen was very fat, and the penis buried in fat and very small for the rest of his development. The testicles were descended, but very small. The urine showed slight traces of albumin, but no formed elements. The roentgen-ray examination of the head revealed a sella turcica definitely smaller than normal, indicating a small pituitary body. Examination disclosed a lowered sugar tolerance. After the administration of pituitary extract for two months there was a decided increase in the sugar tolerance. The patient was given a low carbohydrate diet, which was varied from time to time. While under our care, nearly three months, he lost only 17 pounds. This case represents an excellent instance of pituitarism of the Frölich type, except in certain particulars, namely, some of these cases of pituitarism of the Frölich type exhibited a retarded skeletal development, while this case showed a decided overgrowth. This might depend, as Cushing suggested, on activation of the anterior lobe of the pituitary body combined with insufficiency of the posterior lobe.

Variations in the Lipoid (Fat) Content of the Blood of Infants Under Certain Nutritional Conditions

DRS. W. MCKIM MARRIOTT, St. Louis, and WARREN E. SISSON, Boston: An infant fed on considerable amounts of fat, but unable to utilize this fat, is virtually in a state of fat starvation. Analyses of the stools for fat or its derivatives gives some indication of the efficiency with which the fat of the food is digested and absorbed. Further information can be obtained from a study of the fat of the circulating blood under varying conditions of feeding and states of nutrition. Other factors being equal, well nourished and poorly nourished infants have essentially the same amounts of fat in the blood.

An infant who is gaining weight, no matter what his state of nutrition, will have a higher blood fat percentage than one that is not gaining. Breast fed infants gaining weight show a higher average blood fat than any other group of infants in the series studied. Infants fed on milk mixtures containing no fat showed a low blood fat percentage, much lower than those being completely starved. Some of the infants being starved were suffering from "intoxication," and a few developed acidosis. The infants with acidosis showed blood fat percentages essentially the same as those that did not have acidosis.

DISCUSSION

DR. CHARLES HUNTER DUNN, Boston: Very often an infant gains weight on a fat free diet. What is the result of the blood fat examination in these cases?

DR. FRITZ B. TALBOT, Boston: Did you try to find any connection between high carbohydrate feeding and blood fat?

DR. HENRY F. HELMHOLZ, Evanston, Ill.: In children that have large fat deposits are these drawn on in acidosis? Is it only those that have large fat deposits in the organs that show a high blood fat?

DR. W. MCKIM MARRIOTT, Baltimore: I did not have any infants in this series that were gaining weight on low fat feeding. We had no infants on high carbohydrates, but I think the blood fat would be low under those circumstances.

Relative Efficiency of Mercurial Preparations in Congenital Syphilis

DR. WALTER R. RAMSEY, St. Paul: In infants and children, mercury when given by the mouth, by inunction or subcutaneously is excreted at least partly by the urine. By inunction mercury is readily taken up by the skin and eliminated in the urine and continues to be eliminated for a considerable time. When one inunction is given, the maximum daily amount of mercury is eliminated during the following twenty-four hours, smaller amounts being eliminated for a variable time. Where continuous inunctions are given there is an accumulation in the system, and considerable amounts are eliminated at intervals with only traces between. It is probable, therefore, that it is unnecessary to have mercury in contact with the skin, with or without rubbing, as often or as long as has been generally thought necessary. Mercuric salicylate suspended in oil and given subcutaneously continues to be eliminated in the urine in appreciable amounts for as long as eight days. Therefore, a repetition of the treatment not oftener than at intervals of eight days would be sufficient. Mercuric chlorid by the subcutaneous method continues to be eliminated for eight days. It therefore seems probable that the daily use of any of the mercurial salts in the amounts usually prescribed is unnecessary and presumably harmful.

Standards for Growth and Nutrition of Schoolchildren

DR. L. EMMETT HOLT, New York: The relation of height to weight is important as indicating the state of nutrition, but considerable variation exists in healthy children. A child's nutrition may be considered below the normal when he is 10 per cent below weight for his height between the sixth and the tenth year, or 12 per cent below from the eleventh to the sixteenth year. The best guides to the state of nutrition, and more important than either of the foregoing, is the annual rate of increase in weight and height. The annual increase in weight is from 4 to 6 pounds a year from the sixth to the tenth year, while it rises to an average of 13 pounds in the fifteenth year. The annual increase in height varies normally less than weight. The average increase is from 1¾ to 2 inches a year from the sixth to the eleventh year; it rises to its highest point in boys form the thirteenth to the sixteenth year, when it is usually from 2½ to 3 inches a year. In girls it is highest from the tenth to the fourteenth year. Observations on 1,243 school boys between 10 and 16 years of age showed that they increased in weight 1¼ pounds more in six

months from May to November than from November to May, and that the gain in height was 0.38 inch more during the first named period.

DISCUSSION

DR. JOHN LOVETT MORSE, Boston: Growth in height is most rapid in the spring, and gain in weight is most rapid in the autumn.

DR. ALFRED F. HESS, New York: It has been our experience that children do not gain well in the summer months. The reason Dr. Holt found a greater gain during the summer is that the boys were housed up during the winter and led an outdoor life during the summer. To be of practical value, these observations should be made on hundreds of thousands of children.

DR. CHARLES HENDEE SMITH, New York: Under nutrition affects growth in height as well as in weight. The factor of heredity has also a great influence. The children of taller parents can be made to grow more rapidly, if treated properly, than those whose parents are of short stature.

Complement Fixation Test for Tuberculosis in Infancy and Childhood

DR. HENRY HEIMAN, New York: The serums of fifty-nine patients from 6 months to 12 years of age were tested. Sixteen were tuberculous, six probable or suspicious, and twenty-eight were nontuberculous. Among the former group were six cases of tuberculous meningitis. Complement fixation reactions on the blood of these patients with both antigens was negative in four and only suspicious in two cases. Of seven cases of pleural effusion one was definitely tuberculous, three were probably tuberculous and in three others the etiology could not be definitely determined. In these cases the complement fixation tests were negative with both antigens. The serum of the three patients in whom the etiology was not definitely determined gave negative reactions also. Of six children with pulmonary involvement, two being cases of miliary tuberculosis with the usual course, all gave negative reactions with both antigens.

One case of tuberculous peritonitis gave a negative reaction with both antigens. The diagnosis was subsequently confirmed by necropsy findings. Among twenty-eight cases with no signs or symptoms of tuberculous infection, complement fixation tests revealed three strongly positive reactions, one faint inhibition and one suspicious reaction.

DISCUSSION

DR. PAUL ARMAND DELILLE, Paris, France: Some years ago I made complement fixation tests in tuberculous children and also in adults using old tuberculin and different antigens, and I found that this test was of no value.

DR. J. P. SEDGWICK, Minneapolis: Results with the complement fixation test in tuberculosis are largely a question of the antigen. Dr. Larsen of the University of Minnesota has a better antigen, and he is getting remarkable results.

Value of Auxohormones in Feeding the Young

DR. E. W. SAUNDERS, St. Louis: A condition which I have seen four times during the past year shows a clinical course as follows: A baby that has previously given no cause for anxiety is suddenly taken ill. The symptoms are insomnia, frantic nervousness, vomiting, and loathing of the particular kind of food on which it has been fed, momentary convulsions, rapid pulse, very slight fever and no acetone breath. Tetany is rarely manifested in the hands and feet. Death comes without warning. One factor is invariably found, namely, that the child has been taking a dead food exclusively. This condition cannot be identified with thymic asthma, tetany or spurious hydrocephalus. In the treatment of the conditions, much may be hoped from the prompt and vigorous employment of large doses of glonoin dropped on the tongue and exclusive tube feedings, using a live rennet whey and rapidly increasing the percentage of unpasteurized cream, autolyzed yeast and green vegetable juices. Calcium bromid and the phosphates seem to be beneficial in all cases. If we do not stop the craze for high sterilization in the feeding of infants, we shall have a nation of rickety dwarfs. To protect against this tendency we may feed the yolk of an egg, never the white, honey and vinegar, which we have used during the last two years with increasing satisfaction and which authorities say enhances the value of vitamins. Gruels of natural grains, ground whole, have proved far more acceptable than the 1 per cent cereal decoctions of devitalized grains. Baby's milk may be constructed out of an ounce or more of coconut oil, emulsified with a natural gruel which has been boiled with cabbage and sweetened, preferably with honey. The patent foods for babies are destitute of vitamins and glandular fat and of adequate mineral content, and, in whole or in part, deserve governmental supervision in the interests of the children.

Balantidium Coli Infection in a Child

DR. L. R. DEBUYS, New Orleans: The patient was 5 years of age, had helped round up the pigs, and ate his food at times in the pig pen. He had been ill for nearly a year with diarrhea. There were periods of improvement. Each succeeding attack, however, was more severe than the preceding one. The stools resembled those of amebic dysentery, containing blood and mucus. The rectal tube was passed and the organism was identified.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

June, 1918, 77, No. 6

1 *Operation for Urinary Incontinence in Women by Transposing Levator Ani Muscle. F. J. Taussig, St. Louis.—p. 881.
2 Total Hysterectomy, per Vaginam, Lapping of Anterior Vaginal Wall Fascia and Approximation of Cardinal Ligaments, for Cure of Extreme Procidentia Uteri of Long Standing. D. Bissell, New York.—p. 892.
3 Tretiary Syphilis of Cervix Uteri; Report of Case. O. H. Schwarz, St. Louis.—p. 900.
4 Hemorrhoids of Urethra in Women; Report of Cases. A. Heineberg, Philadelphia.—p. 912.
5 Puerperal Pelvic Infection. J. O. Polak, Brooklyn.—p. 916.
6 *Results of Blood Pressure Observations in Four Hundred and Forty-Seven Cases of Pregnancy. W. C. Danforth, Evanston, Ill.—p. 927.
7 *Blood Transfusion (Citrate Method) in Hemophilia Neonatorum. R. Lewisohn, New York.—p. 933.
8 Conservative Treatment of Displaced Uterus. H. A. Wade, Brooklyn.—p. 936.
9 Indications, Dangers and Contraindications of Uterine Curetment. C. S. Barnes, Philadelphia.—p. 940.
10 Possibility of Mistaking Remains of Hypogastric Artery for Uretetr. S. E. Tracy, Philadelphia.—p. 947.
11 *Cesarean Section in Treatment of Eclampsia. W. E. Parke, Philadelphia.—p. 948.

1. **Operation for Urinary Incontinence.**—The occasion for this new procedure was the necessity of finding some muscle tissue that could be utilized for the purposes of a new sphincter urethrae. It occurred to Taussig that with a somewhat relaxed pelvic floor the anterior bundles of the levator ani muscle could be utilized for this object by transposing this portion of the muscle beneath the anterior vaginal and attaching it under the urethral opening to the pubic ramus of the opposite side. The procedure is described in detail.

6. **Blood Pressure of Pregnant Women.**—Danforth's observations in a series of 115 cases showed that the average blood pressure of the pregnant woman is less than that of the nonpregnant. Labor causes in many cases a rise of arterial tension. Toxemia of pregnancy is accompanied by a rise of blood pressure except in very rare instances and this rise usually precedes other symptoms.

7. **Blood Transfusion in Hemophilia Neonatorum.**—Lewisohn's personal experience in hemorrhage of the newborn comprises eight cases. Six of these were permanently cured by a single transfusion.

11. **Cesarean Section in Treatment of Eclampsia.**—Parke reports twenty-one cases of eclampsia delivered by abdominal section, in addition to or preliminary to eliminative treat-

ment. Two of these mothers died (and four babies), a mortality of 10 per cent. These cases were not selected because they appeared to be favorable, but were cases good and bad as they presented themselves. Many of them were not early cases; that is, the operation was not done promptly after the first convulsion which, Parke says, is the time of election, but even so the percentage of recoveries compares not unfavorably with that of other methods of treatment.

American Journal of Ophthalmology, Chicago

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12 Contraction of Paretic External Rectus Muscle Diminished When Masseters Are Contracted in Act of Biting. P. N. K. Schwenk and W. C. Posey, Philadelphia.—p. 393.
13 Deep Roentgen Ray Therapy in Treatment of Tumors of Hypophysis. C. Loeb, Chicago.—p. 397.
14 Vernal Conjunctivitis Greatly Improved by Radium Treatment. E. A. Shumway, Philadelphia.—p. 404.
15 Blocking of Macular Arterioles as Cause of Central and Paracentral Scotoma of Macular Bundle Type. R. I. Lloyd, Brooklyn.—p. 406.
16 Magnet Extraction of Foreign Bodies from Eyeball. F. Allport, Chicago.—p. 412.
17 Tumors of Eyeball and Structures Accessory. D. F. Harbridge, Phoenix, Ariz.—p. 417.
18 Case of Cystic Brain Tumor; Necropsy Report. G. F. Libby, Denver.—p. 424.

American Journal of Orthopedic Surgery, Boston

June, 1918, **16**, No. 6

19 *Operative Treatment of Nerve Injuries. H. J. Stiles, Edinburgh, Scotland.—p. 351.
20 Arthrodesis of Shoulder Joint. C. H. Bucholz, Boston.—p. 364.
21 *Use of Boiled Bone in Operative Surgery. W. E. Gallie, Toronto, Canada.—p. 373.
22 *Lower Back Pain. A. R. Colvin, St. Paul, Minn.—p. 384.
23 *New Stabilizing Operation for Foot in Infantile Paralysis. F. E. Peckham, Providence, R. I.—p. 397.
24 *Fractures of Tibia Following Removal of Bone Graft. J. A. Brooke, Philadelphia.—p. 399.
25 American Hospital in London. F. C. Kidner.—p. 400.

19. **Operative Treatment of Nerve Injuries.**—Stiles emphasizes the fact that as the operative treatment of peripheral nerve injuries frequently entails extensive, and sometimes difficult, dissections, it is essential that the operator should possess a thoroughly practical knowledge of anatomy. In operations on the nerves of the extremities three assistants are generally required, namely, one to steady the limb, a second to swab the wound and secure the vessels, and a third to take charge of the retractors. Stiles never uses a tourniquet at these operations because the vessels are often a good guide to the nerve and its branches, because much time has to be spent in securing the vessels when the tourniquet has been removed, and because there is a greater tendency to subsequent oozing. During the operation he never bathes the wound with normal saline; the best lotion is the patient's own blood. The dissection to expose the injured nerve should err on the side of being too extensive rather than too limited, and the importance of exposing the nerve above and below the lesion in the first instance cannot be too strongly insisted on. This is especially important when the nerve is bound down by, or embedded in, cicatricial tissue.

While Stiles is careful to use gloves in all septic cases, he considers it a distinct asset to be able to dispense with them where rapid and delicate dissecting work is required; but the omission of gloves must not be attempted unless the surgeon has learned how to keep his skin smooth. Nor is it necessary in performing nerve dissections to protect the wound from the adjacent skin by clamping gauze to its cut edges. By so doing, one only encumbers the field of operation unnecessarily. In suturing a nerve he prefers to use the finest linen thread. A single through-and-through suture is sufficient even for the great sciatic. While it is being introduced, every endeavour should, so far as possible, be made to bring the corresponding fibers of the two stumps into apposition, in other words, there must be no unequal rotation on the stumps. The rest of the sutures include the sheath only. They are most conveniently introduced by means of a fine, curved needle (cleft palate needle) and a needle holder. They should only be in sufficient numbers to prevent protrusion of the nerve fibers. After suture the nerve should not be ensheathed either with a vein, fascia, lata, or Cargile membrane, as these materials only serve to promote the formation of cicatricial tissue. The best bed for the nerve is one consisting of fatty cellular tissue or healthy muscle.

Subcutaneous sutures are quite unnecessary, and their introduction only serves to prolong the operation. It must be remembered, however, that wounds in the long axis of the limb may give rise to a little tension, so that the sutures should be left in for ten days or so. Silkworm gut is the best material to use. With regard to drainage it is seldom necessary to introduce a tube, especially if interrupted sutures are employed, when all that is needed is to leave an interval between one or two of the stitches sufficient to admit of the escape of the blood stained serum. When flexion of the adjacent joint is necessary to take the tension off the nerve, the limb should be carefully splinted, and the first dressings should not be left entirely to the nurses. Those in charge of the after-treatment should not be in too great a hurry to straighten the limb. Increased experience has convinced Stiles that we often delay too long in operating. Delay is justified if there is definite evidence that improvement is taking place, and this is more likely to happen if the nerve has been contused as a result of a fracture, or if the symptoms are due to the pressure of callus. In such cases the improvement is progressive and often ends in complete recovery. In cases, however, where the nerve has been directly injured by a bullet or piece of shrapnel it is a mistake to wait, although the lesion may be only partial. Valuable time is wasted in waiting for a recovery, which, in the end, is only very partial. The operation can do no harm. The pain, the trophic changes, the reflex spasm and the contractures often rapidly disappear. In short, the operation will not only expedite the recovery, but will at the same time render it more nearly complete. Stiles also discusses the treatment of injuries of individual nerves.

21. **Use of Boiled Bone in Surgery.**—Four patients with spine deformities have been operated on by Gallie. One of the patients was operated on two years later for another surgical condition, and with the consent of the parents, Gallie was able to examine the graft and obtain a piece of it for section. The spines were found to be solidly united together by a rigid bar of bone of the same size and shape as the original grafts, except that it was more rounded at the edges and covered with a thick fibrous membrane, resembling periosteum. The piece removed for section was obtained by cutting the graft longitudinally with an osteotome, and it included the tip of one spine and a section of the graft above and below this spine as far as the middle of next space on one side, and as far as the edge of the next spine on the other. In this way the whole length of one segment of the graft was studied. The changes in the boiled spinal graft consisted first, of the union of the graft to the spines by the laying down of new cancellous bone on it. Then comes the reestablishment of the circulation by the ingrowth of blood vessels into the empty haversian canals. Finally, the graft is invaded by osteoblasts along the course of the blood vessels. These osteoblasts slowly acomplish the absorption of the dead bone and its replacement with new living bone, which persists in a somewhat similar gross form, while conforming to the general law governing the architecture of bone. The ability of these osteoblasts to spread along a dead graft as far as half the distance between the spines, Gallie says, is therefore conclusively demonstrated, and the feasibility of locking the spines together for a period of two years by means of boiled bone transplants is indisputably established.

22. **Lower Back Pain.**—On one occasion, in a young person suffering from pain of sciatic distribution, Colvin discovered by rectal examination an infected embolic aneurysm. In another case, supposed to be a sacro-iliac strain, a sarcoma of the sacro-iliac region was found. In a third case a tumor mass about the size of a small fist below the diaphragm, wedged in the costovertebral angle secondary to a primary malignant focus (a small papilloma) in the gallbladder caused severe lower back pain; other cases are cited.

23. **New Stabilizing Operation for Foot in Infantile Paralysis.**—This operation consists of taking a long strip of fascia lata and transplanting it to the lower leg. In a case in which

the tibialis anticus and posticus were paralyzed, there was a marked toe-drop and the foot was turned outward (valgus). The tough fascia which enclosed the muscles and which is attached to the tibia, was split the whole length of the muscle. The lower end of the piece of fascia lata was arranged like a cuff around the tendons of the tibialis anticus and posticus, the dissected surface being next to the tendons and muscle belly. Next, the foot was held in inward rotation and dorsally flexed on the leg, while the upper end of the fascia lata, pulled taut, was stitched down at the origin of the muscles. Then the whole length of the piece of fascia lata was securely stitched to the fascia on either side where it had been divided to expose the muscles and tendons. Another case in which the common extensor and peroneals were paralyzed, was done in a similar manner. Incision was made the whole length of the leg and the enclosing fascia was incised. The long piece of fascia lata was then transplanted. A cuff was formed around the lower end of the tendons, above the annular ligament, the dissected surface being next to the tendons and muscle belly. The foot was then held in strong outward rotation and dorsal flexion, while the upper end of the fascia lata was thoroughly stitched in place. Each side of the strip of fascia lata was then securely stitched to the edges of the divided fascia of the leg.

24. **Fractures of Tibia Following Removal of Bone Graft.**—Fracture of the tibia from very slight injury has occurred in three of Brooke's cases following the removal of a bone graft. In each case the graft was cut by a motor saw and the tibia not split by the chisel in removing the graft. In two cases the bone grafts were used for an ununited fracture of the radius; the third for the humerus. As the incisions had healed promptly and there was no pain over this area, the patients were allowed to walk about at the beginning of the fifth week.

Illinois Medical Journal, Chicago

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26 Some Eugenics Problems that Demand Solution. E. H. Ochsner, Chicago.—p. 301.
27 Surgical Reconstruction During and After War. C. Beck, Chicago.—p. 306.
28 Tuberculosis Period of Profound Peril. K. B. Rich, Chicago.—p. 309.
29 Army Medical Corps. E. J. Doering, Chicago.—p. 312.
30 What Oculist Can Learn from Other Physicians. C. Loeb, Chicago.—p. 312.
31 Disastrous Possibilities in Thyroidectomy. R. M. Parker, Chicago.—p. 317.
32 Appendicitis in Children; Report of Two Cases. I. E. Bishkow, Chicago.—p. 320.
33 Rectal Surgery Under Local Anesthesia. C. J. Drueck, Chicago.—p. 322.
34 Management of Epiphora or Watery Eye. C. H. Francis, Chicago. p. 325.
35 Etiologic Factors of Chronic Constipation. Z. D. Klopper, Chicago.—p. 327.
36 Eye Muscle Imbalance. R. Von Der Heydt, Chicago.—p. 329.

International Association of Medical Museums, Ann Arbor, Mich.

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37 Technic of Preservation of War Material. E. L. Judah, Montreal.—p. 21.
38 American Substitute for Russian Paraffin, A. S. Warthin, Ann Arbor.—p. 30.
39 Histoloid as Imbedding Agent. W. M. Johnson, New York.—p. 31.
40 Modified Sugar Solution as Final Preservative for Museum Specimens. E. B. Ellis, New York.—p. 32.
41 Methods of Organ Reconstruction by Injection of Arterial Tree. L. Gross, Montreal.—p. 33.
42 Methods of Mounting Animal Parasites in Solution, Including Use of Plaster of Paris. F. D. Weidman, Philadelphia.—p. 36.
43 Teaching Collection Connected with Department of Surgical Pathology, Harvard Medical School. D. P. Blair, Cambridge, Mass.—p. 39.
44 Souchon Museum of Normal Anatomy. E. P. Souchon, New Orleans.—p. 42.
45 Anthracosis Associated with Chronic Tuberculosis. O. Klotz, Pittsburgh.—p. 43.
46 Unresolved Pneumonia Associated with Severe Anthracosis. S. R. Haythorn, Pittsburgh.—p. 49.
47 Incomplete Transposition of Great Vessels in Girl of Sixteen. J. W. McMeans, Pittsburgh.—p. 53.
48 Persistence of Cranial Bone Anlagen in Complete Acrania. C. V. Weller, Ann Arbor.—p. 58.
49 Technic of Obtaining Samples of Alveolar Air for Estimation of Carbon Dioxid Tension; Modification of Plesch-Higgins Method. M. E. Abbott, Montreal.—p. 60.

Iowa State Medical Society Journal, Des Moines

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50 Present Status of Cardiac Disease. D. L. Rundlett, Sioux Falls, S. D.—p. 200.
51 Indications for Cesarean Section. N. Schilling, New Hampton.—p. 207.
52 Treatment of Tuberculous Cervical Adenitis. G. Decker, Davenport.—p. 209.
53 What Is Significance of Diastolic Blood Pressure? G. E. Crawford, Cedar Rapids.—p. 213.
54 Some Details in Abdominal Surgery. A. J. Farnham, Traer.—p. 217.

Journal of Biological Chemistry, Baltimore

June, 1918, **34**, No. 3

55 *Rate of Dialysis of Blood Sugar in Experimental Diabetes. I. S. Kleiner, New York.—p. 471.
56 Influence of Neutral Salts, Bases and Acids on Precipitability of Gelatin by Alcohol. J. Loeb, New York.—p. 489.
57 Origin of Conception of Physiologicaly Balanced Salt Solutions. J. Loeb, New York.—p. 503.
58 *Method for Colorimetric Determination of Lactose in Milk. A. J. P. Pacini and D. W. Russell, New York.—p. 505.
59 *Analysis and Composition of Seed of Silver Maple (Acer Saccharinum). R. J. Anderson, Geneva, N.Y.—p. 509.
60 Urea Content of Placentas from Normal and Toxemic Pregnancies. F. S. Hammett, Boston.—p. 515.
61 *Nutritive Factors in Plant Tissues. Protein Factor in Seeds of Cereals. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 521.
62 Milk as Source of Water Soluble Vitamin. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 537.
63 *Hydrogen Ion Concentrations of Various Indicator End-Points in Dilute Sodium Hypochlorite Solutions. G. E. Cullen and J. H. Austin, New York.—p. 553.
64 Carbon Dioxid Content of Urine. W. Denis and A. S. Minot, Boston.—p. 569.
65 Study of Nephelometric Values of Cholesterol and Higher Fatty Acids. F. A. Csonka, Pittsburgh.—p. 577.
66 Metabolism of Mustard Oils. W. H. Peterson, Madison, Wis.—p. 583.
67 *Experimental Studies on Creatin and Creatinin. Alleged Exogenous Origin of Urinary Creatin in Protein of Diet. W. C. Rose, J. S. Dimmitt and H. L. Bartlett, Galveston, Texas.—p. 601.

55. **Blood Sugar Dialysis in Diabetes.**—Blood from diabetic dogs was dialyzed against Ringer's solution, to which was usually added a small amount of dextrose. The rate of dialysis of the blood sugar was determined by analyzing samples taken at regular intervals. This was compared with similar dialyses of normal dog blood which had been brought to the same sugar content by the addition of dextrose. The diabetic blood sugar dialyzed at an irregular rate, with a delayed or completely interrupted dialysis during one or more periods, usually the second hour. The control dialysis (normal blood with added sugar) was not interrupted in this manner. This is interpreted by Kleiner as possible evidence for the existence of combined sugar in diabetic blood, the significance of which is discussed.

58. **Determination of Lactose in Milk.**—A rapid colorimetric method based on the blood sugar method of Lewis and Benedict, is described for the determination of lactose in milk. The method is expeditious and accurate and lends itself admirably for routine laboratory procedure.

59. **Analysis and Composition of Seed of Silver Maple.**—Attention is called by Anderson to the high food value of the seed of the silver maple. The analysis shows that the chief constituents are starch, protein and sucrose. The principal protein is a globulin. The ash contains much potassium and phosphorus. In the seed, the phosphorus is present chiefly in organic combination.

61. **Nutritive Factors in Plant Tissues.**—The authors' experiments indicate that it ought to be possible to make an animal grow on a diet in which the maize kernel is the sole source of protein, provided a preparation of the total proteins could be obtained which would permit feeding them in sufficient quantity so that enough of those amino acids which are present in certain of the proteins and not in the others would be available to meet the minimum nutritive requirements of the organism.

63. **Hydrogen Ion Concentrations of Dilute Sodium Hypochlorite Solutions.**—In the preparation of Dakin's hypochlorite solution it has been customary to adjust the reaction by the use of powdered phenolphthalein. After precipitating

the calcium of the bleaching powder with sodium carbonate, Dakin added boric acid to the strongly alkaline hypochlorite solution until it no longer colored powdered phenolphthalein. Daufresne modified this technic by using sodium bicarbonate in place of boric acid, but still used powdered phenolphthalein as the test for the reaction of the solution according to Cullen and Austin. Such a solution has frequently been described somewhat loosely as a neutral solution of hypochlorite, but it is not neutral. Because of the bleaching action of the hypochlorite, the end points of indicators in dilute sodium hypochlorite solutions are different from the end-points of the same indicators in ordinary solutions.

A method is described for studying the hydrogen ion concentrations of dilute sodium hypochlorite solutions by means of the end-points of powdered phenolphthalein, of phenolphthalein in alcoholic solution, and of o-cresolphthalein in alcoholic solution. The end-point to powdered phenolphthalein in a 0.5 per cent. sodium hypochlorite solution is at a p_H of about 10.1. All of the hypochlorite is present as the salt (NaOC). The end-point to alcoholic solution of o-cresolphthalein in 0.5 per cent. sodium hypochlorite solution is at a p_H about 9.3. The same end-point in a 1 per cent. sodium hypochlorite solution is at a p_H of about 9.6. Of the total hypochlorite in these solutions from 7 to 17 per cent. is present as HOCl. This less alkaline solution is sufficiently stable to be satisfactory for clinical use. The end-point to alcoholic solution of phenolphthalein in similar solutions cannot be precisely estimated by the authors' method owing to the rapid decomposition of the HOCl, which constitutes from 35 to 60 per cent. of total hypochlorite of such solutions. The p_H is probably, however, about 8.5 to 8.8. This solution is highly unstable, because of the low alkalinity, and is also for other reasons unsuitable for clinical use.

It is suggested that for certain purposes the hydrogen ion concentration of dilute hypochlorite solutions be defined more closely than has been the custom in the past. For this purpose the end-points of the indicators established above are of value. For preparing sodium hypochlorite solution (Dakin's solution) for chlorin and sodium carbonate, a method is outlined which secures the required hypochlorite, concentration and also the desired alkalinity, simply by using definite amounts of carbonate and chlorin.

67. **Creatin and Creatinin Metabolism.**—The ingestion of diets excessively high in protein fails to induce the excretion of creatin in normal women and men. Diets yielding 3,400 to 3,900 calories a day, whether accompanied by a moderate (13 gm.) or large (27 gm.) nitrogen intake, exert no appreciable influence on creatin-creatinin metabolism. It is the belief of the authors that no evidence has yet been adduced sufficient to justify the acceptance of a theory which postulates an exogenous origin of urinary creatin in the absence of creatin in the diet.

Journal of Cutaneous Diseases, Chicago

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68 Treatment of Dermatitis Venenata, by Vegetable Toxins. A. Strickler, Philadelphia.—p. 327.
69 Experiments with Roentgen Rays and Radium. W. H. Guy, Pittsburgh.—p. 332.
70 Folliculitis Ulerythematosa Reticulata. G. M. Mackee and M. B. Parounagian, New York.—p. 339.
71 Cheilitis Exfoliativa. D. W. Montgomery, San Francisco.—p. 363.

Journal of Laboratory and Clinical Medicine, St. Louis

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72 *Researches in Rheumatism. W. Lintz, Brooklyn.—p. 509.
73 *Massive Infarction of Spleen; Report of Case. D. G. Richey, Pittsburgh.—p. 519.
74 *Etiology of Scarlet Fever. R. W. Pryer and G. Sewell, Detroit.—p. 525.
75 Adaptations of Renal Function Tests for General Use. W. T. Vaughan.—p. 531.
76 *Three Cases of Parietal Aortic Thrombosis. P. G. Woolley, Cincinnati.—p. 539.
77 Tables for Use in Blood Analysis. F. H. Frankel, New York.—p. 548.
78 Apparatus for Teaching Laboratory. 1. Device for Determination of Time of Muscular Contraction and Relaxation. 2. Automatic Key. A. W. Downs and G. Hays, Montreal, Canada.—p. 553.
79 Simple Mounting for Carbon Dioxid Apparatus of Van Slyke. W. Morse and L. L. Landenberger, Chicago.—p. 557.
80 Uniformly Satisfactory Method of Collecting Urine Separately from Each Ureter in Acute Experimental Work (Dogs). A. B. Luckhardt, Chicago.—p. 558.

72. **Researches in Rheumatism.**—The object of Lintz' work was to demonstrate that in at least a small percentage of cases of acute articular rheumatism a definite micro-organism can be isolated from the blood, and to establish the pathogenicity of the micro-organism by animal experimentation. The four cases which yielded positive blood cultures were typical cases of acute articular rheumatism. The micro-organism isolated resembles a streptococcus. Acute articular rheumatism, with its frequent complication, pericarditis, has apparently been reproduced in a dog, by an organism isolated from the blood of a patient suffering from a similar disease. Further studies are necessary to determine whether acute articular rheumatism is caused by a specific micro-organism.

73. **Massive Infarction of Spleen.**—A negro man, 35 years of age, was admitted to the hospital in a semicomatose state. The only available history was that of a protracted deafness and that the onset of his present illness had antedated his death by a period of eight days. There was no history or antemortem, physical or laboratory finding which pointed to the presence of any splenic condition. The cause of death was directly referable to an acute suppurative meningitis (pneumococcic), the origin of which was an old otitis media and mastoiditis. The spleen was very atrophic, showing a large area of necrosis, fibrosis and calcification, and two small peripheral masses of living splenic tissue surrounded by dense fibrous adhesions. The positive findings in the other viscera were coincidental to the acute infection of the meninges, save for the presence of many small gallstones. No focus from which an embolus could have arisen was found. No congenital abnormalities were evident.

74. **Etiology of Scarlet Fever.**—A preparation made from cultures of an organism isolated from the blood of a man dying of scarlet fever by a method similar to the preparation of typhoidin from the typhoid bacillus gives a higher percentage of reactions in scarlet fever convalescents than is the case in other infectious diseases, while typhoidin gives slightly more positive reaction in other infectious diseases than it does following scarlet fever. The probability of a positive reaction with scarlatin, as the authors call this preparation, increases with the duration of disease and in people with no history of scarlet fever increases with age of the person tested. They do not hold that they have proved that this organism is the etiologic factor in scarlet fever, but that they have presented sufficient evidence to give this organism serious consideration as a possible and probable cause of the disease.

76. **Parietal Aortic Thrombosis.**—Three cases are reported by Woolley in which aortic thrombosis occurred at the seats of syphilitic lesions. From these thrombi, emboli were carried to various portions of the body. In one case the symptoms were acute; in one they were chronic and referred to paralytic disturbances; in one they were probably acute and paralytic.

Kansas Medical Society Journal, Topeka

June, 1918, **18**, No. 6

81 Treatment of Burns. G. M. Seacat, Cherryvale.—p. 133.
82 Uremic Ulceration of Intestine. R. H. Major, Rosedale.—p. 136.

Laryngoscope, St. Louis

June, 1918, **28**, No. 6

83 Pathology and Therapy of Tonsils in Light of Their Physiologic Function. P. J. Mink, Utrecht, Holland.
84 Abnormal Voices: Falsetto, Nasality, Hoarseness, Cleft Palate Speech, Choreatic Speech, Anarthria, Voice of Deaf and Mental Deficient. M. K. Scripture, New York.—p. 457.
85 Lateral Sinus Thrombosis; Report of Three Cases. D. H. Ballon, Montreal, Canada.—p. 465.
86 Attempt at Simplification of Physiology of Vestibular Labyrinth. I. H. Jones, Philadelphia.—p. 472.
87 Periodic Attacks of Vasomotor Rhinitis Followed by Asthma and Symptoms of Paranoia, Recurring Over Period of Ten Years. J. R. Davies, Jr., Philadelphia.—p. 475.
88 Epithelioma of Esophagus; Report of Case. E. Mayer, New York.—p. 477.
89 Unusual Disease Conditions Apparently Cured by Tonsillectomy. V. Dabney, Washington, D. C.—p. 479.
90 Case of Pansinusitis on One Side with Tic Douloureux on Other Necropsy. W. L. Culbert and J. G. Dwyer, New York.—p. 489.
91 Laryngectomy for Epithelioma. H. Arrowsmith, Brooklyn.—p. 489.

92 Embryonic Carcinoma of Ethmoid and Roof of Antrum. J. A. MacKenty, New York.—p. 491.
93 Adenoids in Adults. F. A. Lewis, Auburn, N. Y.—p. 493.

Medical Record, New York

June 29, 1918, **93**, No. 26

94 Origin and Organization of Department of Health of City for New York. S. Smith, New York.—p. 1115.
95 What General Practitioner Should Know About Acute Gonorrhea in Male. A. L. Wolbarst, New York.—p. 1118.
96 Melanoderma Arsenicale Produced by Cacodylate of Iron. D. W. Montgomery, San Francisco.—p. 1121.
97 Normal and Abnormal Psychiatry. B. Lemchen, Dunning, Ill.—p. 1123.
98 Some Medical Antecedents. J. A. Hagemann, Pittsburgh.—p. 1125.
99. *New Method of More Accurately Determining Upper Border of Liver by Means of Percussion. G. L. Laporte, New York.—p. 1126.

99. **Method of Determining Upper Border of Liver by Means of Percussion.**—Laporte percusses from above downward in the mammillary line, laying the end phalanx of the index finger firmly on the chest wall parallel to the ribs and using a medium strong percussion stroke. At the first change of sound from clear pulmonary resonance to a somewhat duller sound a line is drawn on the chest wall. Then place the finger over the liver dulness at the lower costal margin and percuss with the lightest possible percussion (threshold percussion, so light that over liver dulness hardly any sound is audible) upward until a slightly more resonant percussion sound is perceived (lower lung border). Another line is placed on the thorax at this point. The true upper liver border lies half way between these two lines. In all Laporte percussed 100 cases to determine the upper liver border, all of which were controlled fluoroscopically. Of these 100 patients forty-one were examined by the old method. In the vast majority of these, the upper liver border was placed too high, sometimes as much as 5 or 6 cm. Fifty-nine cases were percussed by the new method and the results were found to be much more accurate, very frequently exact, and seldom varying more than 1 cm.

Medicine and Surgery, St. Louis

April, 1918, **2**, No. 4

100 Army and Tuberculosis. P. K. Brown, San Francisco.—p. 389.
101 Examination of Enlisted Men for Tuberculosis. P. Gath.—p. 396.
102 Tuberculous Lymph Glands of Neck Treated by Roentgenotherapy. C. A. Pfender, Washington, D. C.—p. 400.
103 Diagnosis of Early Pulmonary Tuberculosis. M. F. Morris, Jr., Chelsea, Mass.—p. 418.
104 Practical Diagnosis of Tuberculosis from Treatment Standpoint. W. H. Watterson, Chicago.—p. 429.
105 Predisposing Factors in Etiology of Tuberculosis, Theoretically Considered—Plan to Reduce Greatly Incidence of Tuberculosis. O. H. Brown, Phoenix, Ariz.—p. 434.
106 Treatment of War Cases of Tuberculosis by Artificial Pneumothorax. M. E. Lapham, Highland, N. C.—p. 443.
107 Phthisiophobia. S. A. Slater, Oil City, Pa.—p. 447.
108 Occluded Renal Tuberculosis—Autonephrectomy. J. R. Caulk and H. C. Greditzer, St. Louis.—p. 453.
109 Roentgen Diagnosis of Early Pulmonary Tuberculosis. M. J. Hubeny, Chicago.—p. 457.
110 Causation and Prevention of War. J. Dworetzky, Staten Island, N. Y.—p. 487.

New York Medical Journal

June 29, 1918, **107**, No. 26

111 Prevention of Hydrophobia. H. L. Abramson, New York.—p. 1209.
112 Defective Vision; Its Pathologic Significance. A. Gumbiner, New York.—p. 1214.
113 Sarcoma of Corpus Callosum. J. Byrne and A. H. Harrigan, New York.—p. 1217.
114 Tetany. C. E. Hyde, Bridgeport, Conn.—p. 1218.
115 Dichloramin-T in Treatment of Wounds. J. C. Seal, New York.—p. 1222.
116 Acute Febrile Entity with Vomiting, Somnolence and Acetone. H. Lowenburg, Philadelphia.—p. 1220.
117 Gastro-Intestinal Diseases in Aged. S. Floersheim, New York.—p. 1223.

Pennsylvania Medical Journal, Athens

June, 1918, **21**, No. 9

118 Treatment of Fractures of Neck of Femur; Whitman's Abduction Treatment. G. M. Dorrance, Philadelphia.—p. 551.
119 Pneumococcic Peritonitis. E. W. Meredith, Pittsburgh.—p. 556.
120 Treatment of Fracture of Patella. C. D. Schaeffer, Allentown.—p. 558.
121 Surgical Factors in Tuberculous Peritonitis. L. J. Hammond, Philadelphia.—p. 561.
122 Treatment of Chronic Hypertrophic Rhinitis. E. J. Stein, Lancaster.—p. 564.
123 Traumatic Sixth and Seventh Nerve Paralysis; Operative Treatment with Functional Recovery. T. J. Moran, Pittsburgh.—p. 568.
124 Treatment of Malignancy in Mouth and Throat by Radium. R. H. Boggs, Pittsburgh.—p. 571.
125 Functional Tests of Kidney in Diagnosis and Prognosis. O. H. P. Pepper, Philadelphia.—p. 575.
126 Radium in War Surgery. W. H. Cameron, Pittsburgh.—p. 579.

Public Health Journal, Toronto

June, 1918, **9**, No. 6

127 Trail of Medical Vampire. F. Paul, Toronto.—p. 249.
128 Venereal Diseases as Communicable Diseases. M. M. Seymour, Regina, Sask.—p. 255.
129 Relation of Alcohol to Acquisition of Venereal Diseases. G. Bates.—p. 262.
130 Why It Is Worth While to Construct Sewerage Systems in Small Towns of Ontario. F. A. Dallyn.—p. 271.
131 Case of Generalized Vaccinia. J. G. Fitzgerald.—p. 278.
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133 Social Background. Children as Wards. P. J. Bench.—p. 286.
134 Social Control and New State. F. U. Stapleford.—p. 287.

Southern Medical Journal, Birmingham, Ala.

June, 1918, **11**, No. 6

135 *Treatment of Locomotor Ataxia and Genral Paresis by Intraspinous Injections of Bichlorid of Mercury. R. B. McBride, Dallas, Texas.—p. 407.
136 Practical Discussion of Carminatives. G. M. Niles, Atlanta, Ga.—p. 411.
137 Cercomonas Diarrhea and Its Management. S. K. Simon, New Orleans.—p. 414.
138 Dental Foci and Diseases Related. T. P. Hinman, Atlanta, Ga.—p. 419.
139 Rural Tuberculosis as Health Problem. H. Boswell, Magee, Miss.—p. 422.
140 North Carolina Plan of County Health Work. B. E. Washburn, Raleigh, N. C.—p. 425.
141 Latent Manifestations of Syphilis in and About Joints. E. S. Hatch, New Orleans.—p. 431.
142 Scrotal Skin Grafts in Severe Injuries of Penis. S. R. Benedict, Birmingham.—p. 438.
143 Cancer of Penis; Report of Case. M. Y. Dabney, Birmingham.—p. 443.
144 Use of Radium in Nonmalignant Uterine Hemorrhage. C. J. Miller and E. L. King, New Orleans.—p. 449.
145 How Industrial Surgeon Can Best Cooperate with Government During War. J. C. Bloodgood, Baltimore.—p. 453.
146 Retinochoroiditis Juxtapapillaris (Jensen's Retinitis). H. H. Martin, Savannah, Ga.—p. 455.
147 Some Advantages of Sitting Posture in Nose and Throat Operations Under Ether. F. D. Sanger, Baltimore.—p. 459.
148 Value of Ophthalmoscope, Retinoscope and Pupillary Disk in Refraction. A. B. Mason, Waycross, Ga.—p. 466.

135. **Treatment of Locomotor Ataxia and Paresis.**—McBride employs mercuric chlorid intraspinally. From one sixtieth to one fortieth of a grain of mercuric chlorid, dissolved in from 1 to 2 c.c. of distilled water, is introduced into one-half ounce or more of spinal fluid that has been collected from the patient into a glass funnel. Experience with some cases has convinced McBride that infected blood is capable of reinfecting the spinal fluid or vice versa. Where the interval between spinal treatments has been long he has found some fluids that had become negative to the spinal fluid tests, again become positive, and they became so before clinical symptoms were manifest in many cases. It was not until he combined the intraspinal and intravenous methods of treatment that both the blood and spinal fluid became negative to all tests. Results obtained by this combined method are very gratifying and the treatment leads to an absolute cure so far as clinical symptoms are concerned, for at least a good period of time. So far none diligently treated has fallen down.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

June, 1918, **26**, No. 6

149 Modification of Watkins Operation for Procidentia. W. E. Dicken, Oklahoma City.—p. 121.
150 Plea for More Careful Refraction. J. D. Pifer, Joplin, Mo.—p. 125.
151 Disorders of Metabolism; Report of Three Cases. H. J. Stacey, Leavenworth, Kan.—p. 136.

Texas State Journal of Medicine, Fort Worth

June, 1918, **14**, No. 2

152 After the War—What? B. L. Jenkins, Clarendon.—p. 57.
153 Educational Function of Institutions Caring for Tuberculous. B. Cornick, San Angelo.—p. 63.
154 Study of Venereal Diseases. A. I. Folsom, Dallas.—p. 60.
155 Study of Cancer. R. W. Knox, Houston.—p. 63.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

June 8, 1918, **1**, No. 2997

1 Utilization of Muscles of Stump to Actuate Artificial Limbs. V. Putti.—p. 635.
2 Relation Between Heat-Stroke and Malignant Malaria. C. E. H. Milner.—p. 638.
3 Basal Leptomeningitis Resembling Botulism. S. T. Steward. —p. 639.
4 Early and Effective Reduction and Fixation of Gunshot Fractures of Femur. O. H. Williams.—p. 639.
5 *Agglutination in Diagnosis of Dysentery. C. J. Martin, P. Hartley and F. E. Williams.—p. 642.
6 *Postoperative Pulmonary Embolism Due to Condition of Blood. A. L. Smith.—p. 644.

5. **Agglutination in Diagnosis of Dysentery.**—The authors tested the serum from 151 cases of dysentery from whose stools bacilli of this group had been isolated, and found that in only fifty-eight did the patient's serum contain ten or more agglutinin units, that is, less than 40 per cent. of the persons who had recently been infected by a member of the Flexner-Y group exhibited an agglutinin content in the serum of ten or more units. In every case of proved Shiga infection the patient's serum agglutinated the standard agglutinable culture used, and this agglutination was always complete in the highest dilution of the patient's serum tested. These results indicate that in the case of infections due to *B. dysenteriae* Shiga determination of the agglutinin content of the patient's serum constitutes a valuable method of diagnosis.

6. **Postoperative Pulmonary Embolism.**—Smith says that if the full normal proportion of water is present in the blood before operating pulmonary embolism will not occur. Replace by the rectum the amount of liquid lost by vomiting, catharsis, sweating, hemorrhage and urine, either during the operation or immediately after it. Encourage the patient to move the lower limbs freely, if not during the first two days at least during the next ten. Give the patient abundance of water between meals and during the night; it may be hot or cold, sweet, sour, or salty, in the form of lemonade, barley water, weak tea without milk, or beef tea; a jug and drinking cup with spout should be left within reach so that it may be taken when wanted without waiting for the nurse to come. Speedy operating lessens embolism because it means less hemorrhage, and less sweating and less loss of water from the system. Round pointed needles with flat eyes are much less likely to cause hemorrhage than ones with cutting edges, and should alone be used in the abdomen.

Edinburgh Medical Journal

June, 1918, **20**, No. 6

7 Perforated Gastric and Duodenal Ulcer. W. O. Wood.—p. 358.
8 Cerebrospinal Fever. P. W. Maclagan.—p. 370.
9 Training of Student of Medicine: Teaching of Materia Medica and Therapeutics. T. R. Fraser, C. R. Marshall, W. C. Sillar and R. Stockman.—p. 380.
10 Id. Teaching of Public Health in Curriculum of Medical Students. J. Robertson, M. Hay and H. Stewart.—p. 398.

Journal of Tropical Medicine and Hygiene, London

June 1, 1918, **21**, No. 11

11 Case of Blackwater Fever with Prowazekia in Urine. E. T. Wright.—p. 113.
12 Genus Endoplasma Castellani, 1914. S. L. Brug.—p. 114.

Lancet, London

June 8, 1918, **1**, No. 4945

13 *Kineplastic Amputations. V. Putti.—p. 791.
14 Methods of General Anesthesia in Facial Surgery. R. Wade.—p. 794.
15 So-Called Functional Symptoms in Organic Nerve Injuries. J. S. B. Stopford.—p. 795.
16 Conception of Regression in Psychologic Medicine. M. Nicoll. —p. 797.
17 Hernia of Urinary Bladder. H. Blakeway.—p. 799.
18 Effect of Convection Currents on Agglutination. W. W. C. Topley and S. G. Platts.—p. 800.

13. **Kineplastic Amputations.**—Kinematic plastics, or kineplastics, is the term applied to any kind of bloodless or operative plastics that tend to economize, restore, or substitute muscular masses which can be employed toward imparting direct and voluntary movement to an artificial limb. In an actual, or antecedent, amputation or disarticulation, the tendon and muscle, provided they have the necessary physiologic protection (skin, vessels, nerves, etc.) can generally be used for the kinematic prosthesis, provided that they admit of the formation of an artificial point of attachment, to be protected in a similar manner.

Kinematization can be effected, or prepared for, at the time that the primary amputation is made; it can also be done on stumps that have already healed. Motor flaps may vary as to their number, position, shape and function. The most elementary and the most commonly used, are the clava and ansa motors, and also those obtained by means of the canalizing, or tunnelizing, of the muscular masses. As regards the number, the motor can be single, double or multiple; in function it can be either unimotor or plurimotor. When the motor is made to execute two opposite movements in succession one to the other it is called alternative. According to the position they occupy motors are either terminal when placed at the extremity of the stump, or extra-terminal should they be placed in the continuity of the stump. Up to the present the upper limb has been the part that has been the most frequently kinematized, but the number of successful cases of kinematization of the lower limbs is daily increasing.

Putti says that skin flaps, muscular insertions, various bone and tendinous fragments and segments of limbs, which would seem utterly superfluous under ordinary circumstances for the preparation of ordinary stumps, are to be considered of the greatest value in view of the future kineplastics. A motor flap, in order to correspond with the object for which it is made, must conform to the following requirements: 1. It must possess every requisite for withstanding a firm, resisting and painless, grip, also a traction that, in not a few instances, may attain a high degree. 2. It must be provided with a sufficient amount of functional muscular tissue to guarantee the accomplishment of the task that will be demanded of it. The primary conditions for obtaining the first requisites are: 1. That the motors be covered with skin in perfect condition, well nourished, and provided with a normal degree of sensibility. 2. That, with regard to its shape and dimensions, the motor be of a size suitable for the fastening of the hooks, wings, and reds that are destined to transmit the functional movement to the artificial limb. The muscular masses must be sought for and obtained from among those of which the stump still disposes, and that, on account of their anatomic structure and physiologic disposition for the production of broad, strong and independent contractions, are best adapted to the task.

As the tendon is the element best adapted for the transmission of muscular contractions, it must be largely employed for the formation of motor flaps. Should the tendon be missing the muscles must be utilized either by including muscular bundles within the terminal motors or by tunnelizing the muscular masses in order to obtain extra-terminal motors. The antagonistic powers, indispensable to all active movement, must be provided either from the stump itself, by the formation of motors with elements belonging to muscular groups of opposite action, or from the artificial limb by means of elastic resistance in the opposite direction to the resistance offered by the motor flap.

With a view to gaining both space and integuments it may be advantageous, at times, to shorten slightly the bony stump and to perform excision of superfluous muscular masses; this, however, depends on the bone being sufficiently long to allow it. In order to provide such materials as may be missing in loco recourse may be had to the numerous methods that modern plastic surgery places at our disposal, as, for instance, skin, muscular, aponeurotic, or osseous transplantation, etc. Arthroplastics, with the interposition of aponeurotic, flap, may be utilized so as to render mobile those stump segments which, through stiffness and ankylosis, have become unusable. By these same means neo-arthrosis can be created in the continuity of the stump, thus giving the motor flap the power to develop a leverage action.

As a result of kineplastics, it is possible to utilize those stumps which, up to the present, had always been held as incapable

of functional movement, as, for instance, the carpal stumps, the very short forearm stumps, and the disarticulation stumps. The surgeon who, in the case of shoulder disarticulation, succeeds in sparing the deltoid and pectoralis major, in covering these muscles with skin and in finding means for creating a point of attachment may be congratulated on having preserved for the benefit of the mutilated man a precious functional capital. With regard to the difficult problem of utilizing short forearm or short leg stumps, the solution will be enormously facilitated through the preparation of points of attachment that correspond to the insertion of the biceps and patella tendons.

Medical Journal of Australia, Sydney

May 18, 1918, **1**, No. 20

19 Agglutination After Administration of Typhoid and Paratyphoid Vaccines. W. K. Inglis.—p. 405. To be continued.
20 Practice of Anesthetics. E. H. Embley.—p. 410.

Quarterly Journal of Medicine, Oxford

April, 1918, **2**, No. 43

21 *Pathologic Anatomy of Primary Mediastinal Sarcoma. G. T. Hebert.—p. 165.
22 *Pathogenesis of Diphtheritic Paralysis. F. M. R. Walshe.—p. 191.
23 Importance of Mechanical Factor in Treatment of Pulmonary Tuberculosis. H. M. Davies.—p. 205.
24 Bone Changes Occurring in von Recklinghausen's Disease. E. P. Gould.—p. 221.
25 *War Nephritis. N. M. Keith and W. W. D. Thomson.—p. 229.
26 *Gunshot Wounds of Chest. J. M. F. Brickdale.—p. 267.

21. **Pathologic Anatomy of Mediastinal Sarcoma.**—Twenty-six cases were studied by Hebert. He says: Dyspnea is the most prominent symptom, and is often out of all proportion to the amount of lung tissue involved. It was present in all of the cases, and in the majority was very marked. Cough is generally a prominent, and often the earliest, symptom. The amount of sputum is, as a rule, small, and less than in cases of pulmonary tuberculosis. Malignant cells can occasionally be recognized in it. Hemoptysis is said to be an unimportant symptom, but it was recorded in 24 per cent. of the cases. Loss of weight, though not so pronounced as in most cases of extrathoracic malignant disease, is almost invariably present to a greater or less extent. Night sweats were present in 36 per cent. of the cases, and seemed to bear no relation to pyrexia. Pain is a common complaint, cyanosis, venous dilatation, and edema form an important group of symptoms. Dysphagia, hoarseness, and contracted pupil are not uncommon, and may be among the earlier symptoms. Vomiting and hiccough are more rarely seen. Coma, delusions, and mental derangement occur in the later stages. The symptoms due to metastatic deposits in the abdomen are few, and occur late. Cerebral metastases, when they occur, are more important.

Primary mediastinal sarcoma arises in the lymph gland structures of the thorax; that is, the thymus and the lymph glands, except in the cases of the rarer forms of sarcoma such as lipoma sarcomatodes and osteosarcoma and chondrosarcoma, and in the cases of growths of subpleural origin which should really be classed as endotheliomas. Starting in a gland the new growth enlarges, both by extension along lymphatics to neighboring glands and by breaking through the capsule and invading surrounding connective tissue, to form an irregularly lobulated tumor which increases in size in the direction of least resistance. The more rapidly growing of these tumors are, as a rule, soft and white, exuding a milky fluid on section. Small hemorrhages are often seen in the deeper parts, and generally some pigmented glandular remnants. There is usually an ill-defined capsule, continuous with the connective tissue stroma of the growth. Small grey or dull yellow areas of degeneration are present, especially in the more fibrous, more slowly growing tumors, some of which are of a daffodil yellow color. The metastatic deposits and the secondary extensions sometimes show the true features of the growth better than do the mediastinal glands. Degeneration is especially common in the pulmonary growth, owing no doubt to superadded septic infection.

Microscopically, the twenty-six cases of the series presented very similar characteristics. The cell common to all was an oval cell rather larger, sometimes much larger, than the lymphocyte, but, like it, possessing little cytoplasm. The nucleus has a capsule which sometimes appears to be rather shrunken, and it stains less deeply than does that of the lymphocyte. It contains a granular network and a well-marked eosinophil nucleolus. The cells are sometimes seen in pairs, and lie in a delicate connective tissue reticulum. Spindle cells, giant cells, and cells resembling the myelocyte were present in small numbers.

Primary mediastinal sarcoma invades the lung, in the majority of cases, by extension from the mediastinal glands. The trachea suffers, especially at its lower end, in almost all cases of mediastinal sarcoma. The main bronchi are found, generally to have suffered severely. Ten of the twenty-six cases showed invasion of heart muscle. Nineteen cases showed invasion of the pericardium. Cases of primary mediastinal sarcoma are often wrongly diagnosed as pulmonary tuberculosis, and occasionally as aortic aneurysm or as pulmonary fibrosis.

22. **Pathogenesis of Diphtheritic Paralysis.**—Walshe is convinced that diphtheritic paralysis at any rate in the initial and most characteristic of its stages, and of cranial nerve involvement, is an ascending infection of the central nervous system; the toxin elaborated in the membrane passing up to the medulla in the perineural lymph channels of the cranial nerves innervating the tonsils and fauces. There seems, then, to be a twofold mechanism in the production of diphtheritic paralysis in man. There is the initial sometimes severe and relatively short-lived local paralysis, due to the action of the toxin, which has ascended the nerves innervating the local lesion, on the nerve nuclei in the brain stem. Secondly, there is the later, longer-lasting generalized paralysis, which is part of the general sysetmic toxemia.

25. **War Nephritis.**—The data presented by Keith and Thomson were obtained from thirty-three specially selected typical cases of war nephritis. These cases are divided into two groups: Resolving and nonresolving. The resolving group is characterized by: (*a*) Rapid disappearance of edema accompanied by a distinct diuresis, copious excretion of chlorids and fall in blood pressure. (*b*) Rapid diminution in amount of albumin in urine. (*c*) Relatively good renal function. The nonresolving group is characterized by: (*a*) Slow disappearance of edema and delayed diuresis. (*b*) Persistent gross hematuria and persistence of albumin in the urine. (*c*) Development of permanent retinal changes. (*d*) Grave impairment of renal function. The acute nephritis following a focus of infection is a distinct entity from war nephritis. Relapses are of frequent occurrence in both types of the disease and are of serious prognostic significance.

Functional studies during relapse give many interesting results as regards the different methods of excretion of different substances by the kidney. An acidosis of moderate degree is present. In the resolving group this disappears with general improvement, but in the nonresolving group alkali therapy is required to restore the normal acid base relationship. Functional tests are of the greatest value in forming an opinion as to the extent of renal impairment. The gravity of certain cases may be entirely overlooked if one depends on clinical observation alone. In the early stages of the disease the excretion of phenolsulphonephthalein, the urea content of the blood, and the concentration of the chlorids in the urine are the most helpful. When the acute symptoms subside and the above tests give more or less normal results, Ambard's coefficert often shows evidence of a damaged kidney. Prognosis as to ultimate complete recovery, even in the resolving group, must be guarded. In the nonresolving group many cases show relatively early in the disease evidence of permanent renal change. The exhibition of alkali therapy is of distinct service in many cases, as shown not only by a restoration of the normal acid base relationship in the blood, but also by an improvement in renal function.

In cases terminating fatally in the first two weeks of the disease an intracapillary glomerulitis is the most striking histologic feature; in cases in which death has occurred in the fifth week there is found, in addition, a proliferation of the cells lining Bowman's capsule, intense edema of the interstitial tissue, small round celled infiltration and flattening of the epithelium lining the convoluted tubules. Cases in which

death has been delayed to the seventh week of the disease show the proliferated cells of Bowman's capsule replaced by fibrous tissue, with resulting sclerosis of the Malpighian tuft, increase of interstitial tissue, and widespread and severe tubular changes.

26. **Gunshot Wounds of Chest.**—One hundred and sixty-nine cases of injury to the chest came under Brickdale's observation during the last half of 1916. The patients were in most cases admitted within a week after the injury. The initial symptoms were collapse, pain, more or less shortness of breath (often only on exertion), fever, and hemoptysis. Hemoptysis occurred in 117, or 77.4 per cent. As a rule the amount is trifling and the symptom needs no special treatment. In twenty-seven cases diagnosed as laceration or bruising of the lung, in which there were no signs of hemothorax, hemoptysis occurred in all. Febrile symptoms are present in the large majority of cases. The physical signs of hemothorax are usually quite distinctive. They may be confirmed by roentgenography and exploratory puncture. Jaundice of the toxic type was observed in two cases. Abdominal injuries occurred in three cases, and were fatal. Lesions of the nervous system were noted in four cases. In two the spinal cord was damaged, producing paraplegia; in two there were peripheral nerve injuries producing paresis of the right arm. Hematuria occurred in one case. Subcutaneous emphysema was noted in twenty-one cases. Secondary hemorrhage occurred in one instance.

The gross mortality of the 150 penetrating wounds of the chest was nine, 5.6 per cent., but not all of these patients died of thoracic injuries. The deaths which were attributable to purely intrathoracic injuries were four in number, or 2.5 per cent. of the total number of cases. This includes one patient who died of septic pericarditis and pleurisy. Of the nine deaths which occurred in the entire series all but one, were due to septic infection. In twenty severely infected cases there were four deaths from purely intrathoracic causes (20 per cent.). When the fluid withdrawn by the exploring syringe is found to contain numerous bacilli, streptococci, or pus cells, the ordinary surgical treatment for an empyema is necessary. The lightly infected cases may be treated in the same was as those which are bacteriologically sterile, but they require careful watching, and often repeated exploration, as in some the infection becomes more severe, definite pus appears in the pleura, and reaction becomes necessary. In simple sterile hemothorax the treatment will depend on the size of the effusion and its effects on the position of the heart and the general comfort of the patient.

Archives des Maladies de l'Appareil Digestif, etc., Paris

April, 1918, **9**, No. 11

27 Lamblia Enteritis. R. Goiffon and J. C. Roux.—p. 601.
28 Enteroptosis in Connection with Inadequate Dietaries. M. Einhorn (New York).—p. 616.
29 *Paradoxic Chemistry of the Stomach with Gastric Ulcer. L. Timbal.—p. 625.
30 Ictero-Hemorrhagic Spirochetosis. R. Savignac.—p. 645.

29. **Deficient Gastric Secretion with Gastric Ulcer.**—Timbal has encountered eleven cases in which ulceration occurred in stomachs with achlorhydria or hypochlorhydria. These cases of paradoxic chemistry show that too much reliance must not be put on chemical exploration of the stomach. As a rule, however, there is some anatomic viciation which explains the abnormal functional findings, and some inflammatory process must have been responsible for the anatomic viciation. He warns further that in estimating the findings after a test meal the concentration is very important. During the digestion of the Ewald meal, the concentration at the thirtieth minute is 0.09; at one hour, 0.06, which corresponds normally to the acme of digestion, and then the concentration diminishes progressively down to 0.01. When the concentration is above 0.06, we can be confident that the acme of the digestion has not been reached; when below 0.06, that it is past. By this means we can estimate tardy or early hyperchorhydria and thus escape labeling certain cases as hypochlorhydria when there is really excessive secretion. In some the concentration was 0.07, which showed that the stomach contents had been withdrawn before the digestive process had reached its height. This explanation based on the concentration does not explain the cases lacking hydrochloric acid in any form. In his experience, these were mainly cases of ulcer on the lesser curvature. The symptoms with these ulcers, spasm of the cardia, salivation and nausea, suggest that the pneumogastric nerve is responsible for them, and that the ulcer injures this nerve directly. Syphilitic changes may cooperate in some cases.

Archives des Maladies du Cœur, etc., Paris

May, 1918, **11**, No. 5

31 Diastolic Murmur with Simple Perforation of Intraventricular Septum. L. Bard.—p. 193.
32 *Peripheral Signs of Cardiac Symphysis. C. Pezzi.—p. 201.

32. **Peripheral Signs of Cardiac Symphysis.**—Pezzi gives the tracings in some cases, showing the paradoxic pulse, the swelling of the veins of the neck in the course of a tranquil inspiration. It shows in the tracings by an arterial wave of moderate amplitude during expiration; the amplitude is larger during the respiratory pause. This is the paradoxic pulse of mechanical origin, which Griesinger and Kussmaul explained by mechanical factors causing the disappearance of the arterial pulse during inspiration on account of adhesion between the mediastinum and the pericardium. The paradoxic pulse of dynamic—generally respiratory—origin occurs only in forcible inspiration. It is accompanied by the collapse of the vein during inspiration, and shows in the tracings by an arterial wave higher during expiration, while during the respiratory pause the amplitude is moderate. The presystolic liver pulse is the most instructive sign of concomitant endopericardiac symphysis. This presystolic pulsation in the liver testifies that there is some obstacle impeding the right auricle from emptying its contents into the ventricle below. The auricle has to redouble its effort of systole in order to force its contents along, and this forces some of its contents back into the inferior vena cava as far as the liver. If the heart lies free in the pericardium, even if the latter is adherent to the mediastinum, there is no need for this extra effort. It becomes necessary however if the ventricle is encircled by a pericardium whose two sheets are fused together. This stiff shell prevents the normal play of both ventricle and auricle.

Archives de Médecine des Enfants, Paris

June, 1918, **21**, No. 6

33 *Visceral Spasms in Inherited Syphilis. H. H. Barbier.—p. 281.
34 Cultivation of Diphtheria Bacilli on Sweetened Gelose. E. C. Aviragnet and Le Soudier.—p. 299.
35 Recent Works on Effects on Infants of Fat-Free Diet. J. Comby.—p. 313.

33. **Visceral Spasms in Inherited Syphilis.**—Barbier reiterates that the nervous system of the child may suffer predominantly from inherited syphilis, the clinical picture simulating acute or tuberculous meningitis, epilepsy or insular sclerosis. If one bears in mind the possibility of syphilis as a causal factor in such cases, treatment may be instituted in time. Other manifestations on the part of the nervous system are periodical paroxysmal vomiting, attacks of enteralgia, and nocturnal enuresis. He describes in detail seven typical cases of paroxysmal vomiting in children of 4, 5, 7 and 10, in families with known syphilis in parents or grandparents. Two of the children were brother and sister. In some of the cases there were meningeal symptoms or other nervous manifestations. In one family one child had enuresis and recurring enteralgia; another, headache and vomiting about once a month, and a third, epileptiform attacks. The vomiting occurs spontaneously, with no connection with meals, often fasting. It is generally preceded by a few hours or days and is accompanied by violent frontal headache. There is no nausea; the child suddenly grows pale, and vomits in a gush. In some cases this was repeated twenty times in the twenty-four hours, and there was some blood in the vomit. The child returns to his play as soon as the attack is over. The intervals between attacks are irregular; there may be two or three a year or at longer intervals. They are rarely shorter than a few months, but the tendency may keep up for years to puberty. Lumbar puncture gives the clue as the Wassermann reaction is always positive, whether or not there is lympho-

cytosis. Any tendency to fever turns the scale toward tuberculous meningitis in dubious cases.

Bulletin de l'Académie de Médecine, Paris

May 21, 1918, **79,** No. 20

36 Early Vaccination of the Newborn. Wurtz.—p. 391.
37 Hemiplegia from Tuberculous Meningitis. T. Legry.—p. 393.

Bulletins de la Société Méd. des Hôpitaux, Paris

April 19, 1918, **42,** No. 13

38 *Reactions in Blood Serum and Spinal Fluid in Epilepsy. L. Babonneix and H. David.—p. 357.
39 Improvement in Leprosy under Cod Liver Oil. Balzer.—p. 360.
40 *Epidemic Lethargic Encephalitis. H. Claude.—p. 364.
41 *Epilepsy Consecutive to Meningitis. P. Sainton.—p. 368.
42 *Multiple Complications of Scarlet Fever. P. Nobécourt and H. Gimbert.—p. 373.
43 Tardy Tachycardia of Scarlet Fever. P. Nobécourt and H. Grimbert.—p. 378.

38. **Abnormal Reactions in Blood Serum and Spinal Fluid in Epilepsy.**—Epilepsy is unmistakably the result of lesions of the meninges and cortex, and in the majority of cases these can be traced to inherited syphilis. These statements by Babonneix and David are based on a number of etiologic, clinical and therapeutic arguments, and they now present further evidence in the reactions found in the body fluids of both the epileptics and their parents. In ten epileptics the Wassermann reaction was found weakly positive in the blood serum in seven and strongly positive in two; negative in only one case. In over 50 per cent. there was also slight lymphocytosis in the cerebrospinal fluid. Like tuberculosis and like acquired syphilis of the nervous system, inherited syphilis of the nervous system seems to proceed in waves, *poussées évolutives.*

40. **Lethargic Encephalitis.**—Claude describes a case of toxic-infectious encephalitis with somnolence, lethargy to such an extent that there was no psychic or motor reaction, incontinence of urine, and narcolepsy, with transient delirium. Headache, fatigue, somnolency, fever and general malaise were the first symptoms, and now, nearly three months later, there are still some apathy and loss of memory.

41. **Epilepsy Consecutive to Meningitis.**—Sainton describes a second case in which, six months after recovery from meningitis, epileptic seizures developed. In his first case the interval was one month. Netter has had epilepsy develop after cerebrospinal meningitis only twice in 253 cases.

42. **Complications of Scarlet Fever.**—The young soldier during his scarlet fever developed acute articular rheumatism, mitral endocarditis, nephritis and tardy tachycardia. The tachycardia was still evident in the tenth week, as an orthostatic tachycardia, although the heart and kidney disturbances had apparently long entirely retrogressed.

Paris Médical

April 27, 1918, **8,** No. 17

44 *Eosinophils in Pleural Effusions. Petzetakis.—p. 321.
45 Hemorrhage in Kinked Colon. R. Gaultier.—p. 329.

44. **Eosinophils in Pleural Effusions.**—Petzetakis declares that local eosinophilia is more common with pleural effusions than generally suspected. He reports here four cases of associated eosinophilia and basophilia with a hemorrhagic pleural effusion, or with traumatic hemothorax. The eosinophils in some cases reached 60 or 75 per cent. They seemed to have been formed directly in the pleura, the result of a special degeneration of the leukocyte elements which occurs only in an aseptic medium. The sterility of the fluid explains the lack of symptoms. He ascribes to this same mechanism the eosinophilia of convalescence. The vascular system during an effusion may be regarded as a closed aseptic cavity, conditions entailing degeneration of the leukocytes and consecutive eosinophilia. The eosinophils in the pleural effusion get into the blood finally, which explains the tardy eosinophilia.

Presse Medicale, Paris

May 9, 1918, **26,** No. 26

46 *Bone Grafting. L. Imbert.—p. 233.
47 *Spinal Anesthesia. Desplas and P. Millet.—p. 234.
48 Improvised Transfusion of Blood. P. Thévenard.—p. 237.

46. **Bone Grafting.**—Imbert has made a special study of this subject, and states that the tibia seems to be better for bone grafting than the fibula or a rib, for reasons which he enumerates. Also that the final outcome of a graft cannot be estimated until after several years. He emphasizes further that the method of implantation of the graft is of prime importance; the best results are obtained when the graft is cut pointed to fit into a cavity made for it in the bone stump, or vice versa. This does away with the necessity for metal or other foreign body fixation. His experiments on animals always resulted in the complete absorption of a subcutaneous graft, but the focus of fracture in man, even when there seems to be a totally inert pseudarthrosis, still retains a latent bone-producing power which can be stimulated to action by some irritation. The implantation of a graft seems to be the most effectual means to accomplish this.

47. **Stovain Spinal Anesthesia.**—Desplas and Millet found that the stovain was all eliminated by the urine before the ninth hour in the fifty cases examined. The blood pressure dropped lower only in three of the forty men tested, and these were in severe shock when the anesthesia was begun. In all the others the blood pressure persisted normal or was brought down to normal. They are confident that in a number of the cases in which they were compelled to operate while the man was in profound shock, he would have succumbed with any other method of anesthesia.

Progrès Médical, Paris

April 20, 1918, **33,** No. 16

49 *Mental Disease among Combatants. H. Damaye.—p. 141.
50 Case of Acquired Morbid Fear. P. Voivenel.—p. 144.
51 Primary Suture of Shell Wound of Elbow in Man of 72. R. Didier.—p. 146.

April 27, 1918, **33,** No. 17

52 Primary Resection for Wounds of Joints. R. Leriche.—p. 149.
53 Simplified Transfusion of Blood. J. Fiévez.—p. 150.
54 Postoperative Meningitis. Lochelongue and R. Didier.—p. 151.
55 A Medical Officer under Napoleon. P. Voivenel.—p. 152.

49. **An Army Center for Nervous and Mental Disease.**—Damaye has classified the psychiatric cases that passed through his ambulance during the last two years. He compares the types observed with the events of the war taking place at the time. His classification includes 131 different types of mental disturbance. Mental and neuropathic phenomena are generally associated. Of the total 908 men, 647 were discharged cured or far on the road to a cure. Only 23 had to be sent to an asylum; 12 died; 31 tried to commit suicide. The symptoms in men who had been wounded in the skull were of the neurastheniform type observed after concussions and bombardments. The physical condition was generally poor in all the men. A calomel purge was given at once, and the men were not allowed anything but milk and water, with sodium bicarbonate, for several days. Iodin and arsenic, especially sodium cacodylate, were found extremely useful. The younger soldiers were inclined to react with convulsions, like children, under the influence of extreme fatigue or intense emotional stress.

Revue de Chirurgie, Paris

Sept.-Oct. 1917, **36,** No. 9-10. Published April, 1918

56 *Petrolatomas. O. Jacob and Fauré-Fremiet.—p. 221.
57 *Action of Hypochlorites. N. Fiessinger and R. Clogne.—p. 264.
58 Fractures of Lower Jaw. L. Imbert and P. Réal.—p. 304.
59 Projectiles in Mediastinum. R. Le Fort.—p. 320. Continuation.
60 *War Wounds of Heart. H. Costantini and M. Vigot.—p. 383.

56. **Petrolatomas.**—Seven cases are reported of tumors developing consecutive to injection of camphorated oil, the "oil" used being liquid petrolatum. The experiences on record with paraffin tumors should have warned against the use of petrolatum for the excipient. The tumors first became manifest from five to nineteen months after the injection. They did not modify the general health, but the pains from the tumors and their interference with the use of the limb compelled their removal in each case. There was recurrence of the tumors in every instance, evidently from some particles of the petrolatum left in the tissues. The tumors should

therefore be cut out by extensive excision as for a malignant growth.

57. **Biologic Study of Alkaline Hypochlorites in War Wounds.**—The conclusions of the extensive research reported are to the effect that the improvement realized in wounds treated by the Carrel continuous irrigation method is due more to the proteolytic action of the hypochlorites on mortified tissues rather than to any sterilizing action. The Dakin solution has a weak germicidal power, but on muscle tissue and in war wounds continuous irrigation with Dakin's solution, in the doses employed at present, does not realize a sterilization. All antiseptics may be classed in two groups: the cytopexic and the cytolytic, namely, those which coagulate the albumins in the wound and thus create a barrier between them and the deeper elements, and those which dissolve these albumins and thus sweep out and clean out the wound. The cytopexics are not antiseptics, and the cytolytics are only weakly antiseptic. The alkaline hypochlorites are cytolytic. Dakin's solution is the form with a constant constitution, and its action is tolerated by the tissues. Its antiseptic power is weak; the more albumins it dissolves, the more diluted its antiseptic action.

60. **Immediate Operations on the Heart for War Wounds.**—Costantini and Vigot emphasize that the operation should be terminated by transfusion of blood and that a curved and threaded needle should be used. This harpoons the wound, and the needle once planted is let go. By so doing, there is no risk of tearing the wall one is about to suture. Experiments on the cadaver indicate that ample access can be realized by resection of the fourth cartilage and a 3 cm. segment of the sternum. The loss of these tissues is immaterial, while this technic relieves the heart from rubbing against this portion of the sternum and cartilage. The symptoms from a war wound of the heart vary widely with the seat of the wound and the degree of the hemopericardium. A projectile in the heart muscle may escape detection with the roentgen rays. When the rays fail to show hemopericardium, intervention is not urgent, as a rule, although there is always a possibility of extensive hemorrhage into the pleural cavity. In two cases described the men recovered after immediate removal of the projectile. In a third case the operation would have been feasible but for a fatal abdominal wound. After death the proposed operation on the heart was done as planned, confirming the assumed premises. In a fourth case the man died after the operation, and necropsy revealed injury of the lung explaining the fatality.

Revue Médicale de la Suisse Romande, Geneva

April, 1918, 38, No. 4

61 *Rupture of Aortic Valve from Muscular Effort. P. Reinbold.—p. 229.
62 *Treatment of Endemic Goiter. F. Messerli.—p. 248.
63 *Retention of Elements of Bile. P. Gautier.—p. 254.
64 *School Inspection in Rural Districts. S. Chapuis.—p. 260.

61. **Traumatic Rupture of Aortic Valve.**—Reinbold remarks that the aortic valve is less able than the mitral to resist rupture; in Ranelletti's compilation in 1910, there were forty-nine cases of rupture of the aortic valve to twenty-seven of the mitral, two of the tricuspid and one of the pulmonary valve. With rare exceptions, only the valves in the left heart are liable to rupture from physical effort alone. In a case described, the man of 43 had always had good health. There was no history of scarlet fever or rheumatism. He does not smoke and is temperate in drinking and nothing could be found to throw any light on the suddenly developed valvular lesion except a slip on some stone steps, when he made a violent effort to keep from falling, seizing the balustrade with both hands. As he did this he felt a sharp pain, radiating to the left side of the head, with vertigo. He nearly fainted, but recovered and walked on feeling an oppression in his left side and noticing a peculiar sound in the heart region. The physician found a lesion in the aortic valve.

Such lesions are important from the standpoint of accident insurance and workmen's compensation. A man with a ruptured valve is unable to do heavy work thereafter, and this detracts materially from his earning capacity. In athletics the muscles are keyed up and on the alert to respond to the demands of the sport, but in a sudden slip on an icy staircase the muscles are caught unawares, and the surprise and wrench are incomparably greater. Under the influence of the surprise the effort made is excessive. On the other hand, if the previous condition was known with greater precision, there probably would not be so many cases recorded of "rupture of a sound valve." The Swiss compensation laws provide for cases in which the injury is the result of an accident acting on a previously damaged organ. This principle is new in their jurisprudence, and it imposes on the profession the necessity for being on the alert to detect all the factors in the injury. The compensation of course is estimated lower when it is a question of a previously damaged organ. A retrospective diagnosis is often difficult, but it is indispensable in these cases. In the case reported, even in the absence of any known predisposition, there is still a possibility of arteriosclerosis, syphilis, and infectious endocarditis. In a middle aged man, arteriosclerosis seldom is revealed by peripheral manifestations. In the elderly, on the other hand, arteriosclerosis can be regarded as an organic modification entailed by age, and it cannot be accepted as of special causal importance. As the Wassermann reaction is relatively inconstant, a negative response leaves a query. In Germany the indemnities for traumatic heart lesions are estimated at 50 or 70 per cent. but these lesions sometimes permit light occupations. The physician's word is decisive here.

62. **Benzonaphthol in Treatment of Goiter.**—Messerli has already published several communications on the benefit, with goiter, from systematic disinfection of the intestines. His works have been duly summarized in these columns, as on page 607 of THE JOURNAL, Feb. 19, 1916. The goiters likely to be influenced by this means are the large soft goiters of the follicular, hypertrophic and parenchymatous types. He reports two new cases which apparently confirm anew his statements. The profile views of the young men show no trace of the goiter after five weeks of benzonaphthol, three doses daily, each 0.5 gm. The circumference of the neck at three levels had grown smaller by 4, 6 and 4 cm. in one case and by 5, 5 and 1.5 cm. in the other. The disinfection of the intestines has to be kept up continuously. It does not interfere with iodin treatment of the goiter. His experience confirms MacCarrison's statements as to the causal importance of intestinal abnormalities.

63. **Dissociated Retention of Elements of the Bile.**—Gautier remarks that the easiest and simplest means of research in this line is with the urine. The Grimbert method is useful for determining the bile pigments, with the Hay sulphur reaction for the bile salts. Study of the blood dust always confirmed the urine findings in his experience, and this research on dissociated retention threw light on the functional capacity of the liver. It revealed even slight insufficiency, transient or durable, of the liver cell. Repeated examinations allow close surveillance of liver functioning, and he advocates this as a reliable aid in the diagnosis and prognosis in every case of suspected liver disease. He gives a few charts showing retention of bile pigments and even of urobilin in the course of pneumonia and scarlet fever; in some cases of cirrhosis of the liver there was retention merely of bile pigment.

64. **Medical Inspection in Rural Schools.**—Chapuis comments approvingly on Pahud's article on this subject (summarized in these columns, May 18, 1918, p. 1508). Chapuis, however, insists that the medical inspection should watch over the children's earlier years, to ensure better physical material when the children enter school. In the villages in his district, eighty of the 449 children entering school for the first time last year had signs of rachitis, and the chest was not of normal shape. In one village this was recorded of sixty-six of the 275 children. The country life and fresh air and exercise could not outbalance the effects of injudicious feeding in infancy. He has had two large cards printed, one with directions for feeding infants six months old, and the other, from 8 to 18 months old. Whenever the mothers pay heed to the card the infants speedily throw off their rachitis and begin to thrive.

Correspondenz-Blatt für Schweizer Aerzte, Basel

May 18, 1918, **48**, No. 20

65 Physiology and Pathology of the Placenta. Guggisberg.—p. 625.
66 *Congenital Syphilis of Bones. A. Hotz.—p. 631.
67 *Cretinism. Finkheiner.—p. 637. Conclusion.
68 Arrosion of Aorta by Gravity Abscess. K. Schnyder.—p. 655.

66. **Cure of Bone Lesions from Congenital Syphilis.**—Hotz gives a series of roentgenograms which show the gradual return of the bones to normal under the influence of specific treatment. The patient was a 3 months' infant with various manifestations of congenital syphilis, severe osteochondritis, various superficial lesions, and coryza. In the ten weeks' course of treatment, practically the normal shape of the bones was restored. The bone lesions of older children take much longer to retrogress than infants', and the restitution is never so complete. In his case the periostitic process was slower in retrogressing than the osteochondritis, but in both the tendency to rapid recovery of normal conditions was amazing. The Wassermann reaction was still positive when the bone lesions had entirely retrogressed, as also in Hasler's similar case, while in Therstappen's case it had veered to negative before the bone lesions had entirely retrogressed.

67. **Cause of Cretinism.**—Finkheiner found 56 per cent. males to 44 per cent. females in the 119 cretins in the Nollen district. The smaller the villages the larger the proportion of cretins, as also of deafmutes and of conscripts rejected on account of goiter. The native-born furnish the overwhelming majority of cases. He accepts this as disproving the infection theory, as a pathogenic parasite could not distinguish between those born in the region and those moving in later. Healthy persons from other regions need not fear cretin offspring, not even when one parent is native-born. But a marriage between the native-born, even when both are healthy, is liable to yield cretin children, as there is usually some more or less distant blood relationship between the people in small, stable communities. Even moving to an endemic-free region does not avert this doom. It is not the place but the family taint that is responsible for the endemic. He reiterates that immigration is absolutely free from danger while emigration is no protection. Nothing was found in this district to sustain in any way the theory of water, soil, the thyroid or infection as responsible for cretinism. The data all point to inbreeding, and that only by heredity can this form of degeneration appear in a family. Cretinism prevails in remote, shut-in communities, and it dies out when the place becomes accessible by a railroad, or when industries bring in new blood. This dying out of cretinism as transportation is improved is the reverse of what occurs with infectious diseases. For example, Chagas' disease (which has certain features resembling cretinism), has spread along the route of the railways in Brazil.

Gazzetta degli Ospedali e delle Cliniche, Milan

April 28, **39**, No. 34

69 Roentgen Study of Large Intestine. A. Berti.—p. 333.

May 2, 1918, **39**, No. 35

70 Radiotherapy of Uterine Fibromyoma. L. A. Oliva.—p. 345.

Policlinico, Rome

May 19, 1918, **25**, No. 20

71 Bacteriologic Diagnosis of Dysentery. A. Ascoli.—p. 461.
72 Serotherapy of Anthrax. L. Lollini.—p. 467.

May 26, 1918, **25**, No. 21

73 *Spirochete Jaundice. E. Bravetta.—p. 485.
74 *Reenforcing the Heart Sounds. A. Amati.—p. 489.
75 *Tuberculosis in Soldiers. C. Baduel and G. Mendes.—p. 492.

May, 1918, **25**, Surgical Section No. 5

76 *Hematoma Aids in Bone Regeneration. L. G. Gazzotti.—p. 129.
77 *Secondary Hemorrhage after Ligation. G. Razzaboni.—p. 145.
78 Gas Infection of War Wounds. V. Calo.—p. 158. Continuation.

May, 1918, **25**, Medical Section No. 5

79 *Gastric Pneumatosis. A. Ceconi.—p. 129.
80 *Treatment of Empyema. E. Morelli.—p. 153.

73. **Spirochete Jaundice.**—Bravetta draws the clinical picture of this disease from the hundreds of cases he has had in his care. There is an incubation of a week or two, then the period of invasion which lasts from two to six days, with fever usually so slight that it is not noted, but there is no jaundice although there may be intense muscular pains, suggesting rheumatism, or digestive disturbances with headache, suggesting typhoid. Then follows the stage of jaundice, during which the temperature drops to normal or even below and the pains subside. There is usually an interval of a day between defervescence and the onset of the cholemia. It is accompanied by weakness, at times extreme, the spleen and liver enlarged. A special feature of the disease is that the temperature runs up again after an interval of from four to six days. The glands also swell, especially in the right axilla. There were no hemorrhages from skin or mucosa in his cases, but a tendency to rhinorrhagia was common. As the jaundice and albuminuria subsided, the depression was extreme, with vague pains, low blood pressure and brownish tint of the skin and the prostration and convalescence were long protracted.

74. **Reenforcing the Heart Sounds.**—Amati has found that the heart sounds can be rendered more distinct by pressing with the finger on the abdominal aorta during auscultation. He has noticed also that percussion of the retrocardiac region does not yield appreciable findings in normal conditions, but when a patient has been lying for a long time on his back, the heart settles down closer to the rear wall, and percussion may show a dorsal area of dulness. Percussion from the rear may also reveal conditions in the left auricle, the outline of the heart, and possibly cardioptosis.

75. **Tuberculosis in the Army.**—This communication, presented at a recent interallies conference at London, relates what Italy is doing for tuberculous soldiers. The war has rendered it possible to detect tuberculosis in the entire male population between the ages of 18 and 44, and to ensure that the tuberculous get proper treatment and instruction in prophylaxis for themselves and others. This has been realized by the close cooperation between the war department and the public health service, with the Italian Red Cross to supplement them. Soldiers found to be tuberculous are given a pension for three years and the family receives financial aid while he is being given institutional treatment. The effort is made to have the soldier discharged from the army on account of tuberculosis cared for in a sanatorium near his home. The suspects among the repatriated prisoners of war are sent on in the same train to the seaside sanatorium at Nervi, which has accommodations for 1,200. The suspects from the army are sent to the sanatorium near Florence. Both are new and well equipped sanatoriums, beautifully located. The Red Cross has two trains for the tuberculous, four climatic sanatoriums with a total of 900 beds, and three institutions for the moderately severe cases, total 640 beds. The army has seven regional sanatoriums, with a total of 3,808 beds, eleven institutions for the advanced cases, besides the Nervi and Florence sanatoriums, and centers in each army corps for prolonged observation and diagnosis by the most approved methods. Some corps have more than one.

When a soldier develops tuberculosis, it is usually within a month or two of his entrance on active service. Those who have been at the front for one, two or three years very seldom develop tuberculosis. This has convinced every one that the stress of service is so liable to fan a latent tuberculosis into a flame, that the most stringent, searching tests are now applied to keep out of the army those with tubercle bacillus infection in any form and in any stage. Those already in the army are being weeded out as rapidly as possible. All have to pass through the institutions for confirmatory differential diagnosis, and here they are trained in prophylactic measures before being returned to civilian life. If they need treatment, they are pensioned the same as if they had been wounded in the service.

76. **Influence of Hematoma on Healing of Fractures.**—The extensive experimental research reported by Gazzotti seems to show that the presence of a hematoma stimulates the periosteum to greater regenerating activity.

77. **Artery Walls with Secondary Hemorrhage.**—Razzaboni always found evidences of an infectious process in the walls after ligation and secondary hemorrhage. (See Abstract 87, p. 155.)

79. **Gastric Pneumatosis.**—Ceconi has encountered a number of cases in which symptoms seemed to indicate heart or

lung disease but the sole cause of the disturbances was the extreme distention of the stomach with air or gas and vagotonic spasm of cardia and pylorus. The vagotony was the most prominent feature of the cases. The displacement of the diaphragm entailed dyspnea, and the displacement of the heart entailed sometimes palpitations and other disturbances, sometimes suggesting even angina pectoris. The clinical picture corresponds to that with dyspeptic asthma, flatulent dyspepsia, reflex digestive neurosis, the cardiac neurosis of public officials, psychogenous dyspepsia and gastrocardiac neurosis as described by various writers. Ceconi insists, however, that the clinical picture depends directly and exclusively on the hypertension of the stomach. Examination later, during the absence of symptoms, will show that all is in order once more, and that any assumption of heart or lung disease is unjustified. The relief and improvement of the disturbances during and after exercise aid in excluding true heart disease.

80. **Prophylaxis of Empyema After War Wounds.**—With the technic described with an illustration, Morelli has succeeded in curing 85 men with "closed" war wounds of the thorax, with complicating empyema in only 2 cases, and empyema developed in only 6 cases in 22 with "open" wounds of the thorax. Of the total 110 cases of war wounds of the thorax, all the men recovered except 5 and none of the deaths were from hemorrhage. The recovery was complete, both anatomic and functional, in nearly every instance. In his experience with 400 cases of war wounds of the chest, the advantages of the most active intervention at the earliest moment have been impressed on him beyond the possibility of question. After the surgical toilet the wall must be closed airtight, and he accomplishes this with a long, inflatable rubber bag, narrowing in the center so that it fits firmly in the breach. A tube passes through the rubber bag and ensures effectual drainage. As the bag is inflated through another tube, it closes the breach in the chest wall air tight. The drain tube is connected with a vacuum jar apparatus arranged so that the pressure in the apparatus balances that in the chest. Any effusion or pus upsets the balance, and the fluid is aspirated out through the drain tube, after which the balance is spontaneously restored again, compelling the expansion of the lung. An arrangement of cocks permits flushing the pleura through the same drain tube, followed by aspiration of the fluid. He uses some disinfectant fluid at first, thus flushing out the cavity several times a day, and less frequently later. He describes his technic without waiting for further experience as the remarkable improvement realized to date has been so striking and so constant that he wants others to benefit by it. He has found a simple stout rubber bulb answers the purpose of the aspiration apparatus in certain mild cases. It is connected with the drain tube with a three-way cock, one for aspiration of the endopleural fluid and to promote expansion of the lung, one for releasing the fluid aspirated out, and the third for expelling the air without increasing the suction.

Riforma Medica, Naples

May 11, 1918, **34,** No. 19

81 *Slow Endocarditis. A. Ceconi.—p. 362.
82 Displacement of Foreign Bodies in Skull and Spine. A. Cortesi and F. Bonola.—p. 365.
83 Gas Gangrene. E. Aievoli.—p. 369.

81. **Slow Endocarditis.**—Ceconi describes a case he encountered ten years ago in a young woman. It began with a gallstone cholecystitis. This was followed by an irregular slight fever over five months, when a violent chill ushered in septicemia which finally led to endocarditis with a fatal termination over seven months later. The clinical course and necropsy findings are compared with the literature on the subject. The colon bacillus was found in the gallbladder but a small streptococcus was found in the heart walls and valves. He warns that endocarditis should always be suspected with septicemia, even when no symptoms call attention to the heart. Endocarditis is one of the sources of bacteriemia which remain longest unknown and unsuspected. We know now that bacteria do not proliferate in the blood but perish in the blood. In septicemia, consequently, the bacteria found in the blood are being constantly supplied from some possibly unsuspected source. This compels extra surveillance of the heart as the possible source of the bacteria.

Rivista Critica di Clinica Medica, Florence

April 20, 1918, **19,** No. 16

84 Diarrhea and Dysenteriform Enteritis in Troops on Active Service. A. Roccavilla.—p. 181. Conclusion.

May 4, 1918, **19,** No. 18

85 Landry's Paralysis of Poliomyelitis Type in a Syphilitic. A. Salmon.—p. 205. Commenced in No. 17, p. 193.
86 Kernig's Symptom in War Psychoneuroses. L. Siciliano.—p. 209.

Annaes Paulistas de Medicina y Cirurgia, S. Paulo

September, 1917, **8,** No. 9

87 Biology of Dermatobia Hominis. A. Neiva and J. F. Gomes.—p. 197.
88 *Skunk Eats Cobra. F. Iglesias.—p. 210.
89 Paraspecific Serotherapy by the Mouth. P. Burnier.—p. 212.

October, 1917, **8,** No. 10

90 Absence of Side Walls of Nose. J. A. Galvão.—p. 221.
91 *Serotherapy of Pregnancy Toxicoses. V. Marcondes.—p. 234.

88. **Skunk Immune to Cobra Venom.**—Iglesias found that a young skunk brought up in captivity attacked and ate venomous snakes. The skunk was repeatedly bitten by the cobras, but showed no effects from this at the time or later. Skunks are numerous in Brazil, and he remarks that if they prove generally to be the ophiophagous mammal this specimen certainly is, they should be protected.

91. **Serotherapy of Pregnancy Toxicoses.** — Marcondes ascribes to pregnancy toxemia all the pathologic manifestations from headache to fatal eclampsia. The glands with an internal secretion are not able to keep pace with the production of toxins from the fact of the pregnancy. By injecting serum from a pregnant woman we may be able to supply the deficit, and this has proved its usefulness in the clinic. The inconvenience of obtaining human serum for the purpose suggested the use of serum from pregnant goats, and this proved extremely effectual in the two cases described. One was a case of pregnancy dropsy, asthma, itching urticaria and acne; the other of uncontrollable vomiting. Only 5 c.c. of the antitoxic goat serum was injected, repeated in five days, and by the third injection the symptoms had all disappeared except slight albuminuria. In the case of uncontrollable vomiting, with albuminuria and urticaria, 10 c.c. of the serum were injected daily, and the vomiting ceased after the third day.

Brazil-Medico, Rio de Janeiro

April 6, 1918, **32,** No. 14

92 *Defective Development of Muscles. A. F. de Magalhães.—p. 105.

April 13, 1918, **32,** No. 15

93 Flagellate Parasites. VII. O. O. R. da Fonseca.—p. 113.
94 Eugregarina Parasites of Arthropods. VI. C. F. Pinto.—p. 113.
95 *Hemiplegia of Larynx. E. de Moraes and C. Fraga.—p. 114.
96 Methylene Blue and Arsenic Preparation in Treatment of Noma. C. de Rezende.—p. 115.
97 Application of Carrel Method at Buenos Aires. C. Barcellos.—p. 116. Commenced in No. 14, p. 106.

92. **Deformities from Defective Development of Muscles.**—There are five types of deformities in the young infant, varus equinus, valgus, bilateral talipes and permanent flexion of the arm. De Magalhães in analyzing them shows how each is the result of defective development of certain muscles. Persevering massage and manipulations may start these muscles to physiologic development in time, and thus there is hope of correcting some if not all of the deformities.

95. **Hemiplegia of Larynx.**—The man presented a typical example of what is known as Jackson's syndrome. On waking one morning recently he found swallowing and speaking difficult and the left arm was weak so he could scarcely lift it. The symptoms were those from complete paralysis of the left side of the larynx, similar to what has been published as the result of a shrapnel ball in the region. As the patient was known to be syphilitic, specific treatment was applied on the assumption of some syphilitic lesion in the bone nearby, and the prompt restoration to practically normal conditions confirmed the corectness of this surmise.

Gaceta Medica de Caracas

May 15, 1918, **25**, No. 9

98 *Relapsing Fever in Venezuela. R. Pino Pou.—p. 93.
99 Vaccine Therapy of Typhoid. E. P. de Bellard.—p. 97.

98. **Relapsing Fever in Venezuela.**—This disease had never been reported in Venezuela until recently Pou encountered a case in a well-to-do man who had arrived from San Cristobal after a four days' trip through the Panama district. The symptoms seemed to be those of acute malaria except that the liver and spleen were enormously enlarged. The patient said he had never had malaria, and this enlargement was too extreme for recently acquired malaria. The spirochete of relapsing fever was found in the blood, and rats inoculated with it developed the disease, but not monkeys, rabbits, dogs or fowls. This testified that the spirochete could not be the spirochetes of relapsing fever as observed in Europe, Africa and India; certain features suggest identity with the spirochete of relapsing fever as encountered in French China. Attempts to transmit the disease by rat fleas proved negative; no experiments were made with lice. A rat developed the disease after inoculation of a few drops of citrated blood from the patient, the second day of the second period of apyrexia. This confirms Darling's findings as to the virulence of the blood during the afebrile intervals. In the rodents, as in the clinical case, the disease occurred with an attack of invasion and two relapses, separated by two periods of apyrexia of five or seven days. There was always diarrhea during the afebrile period. The disease subsided without serious consequences in both man and rat. Since this report was published, two more cases have been discovered at San Cristobal and two at Caracas.

Medicina Ibera, Madrid

February 28, 1918, **2**, No. 17

100 *Indications for Early Prostatectomy. R. Molla.—p. 257.
101 Rubber Tissue in Dermatology. Sicilia.—p. 258.
102 Cancer of the Tongue. Chornet and L. Arago.—p. 261.

100. **Early Prostatectomy.**—Molla advocates prostatectomy always when a man under 60 develops prostatic retention, even when not more than 60 gm. of urine are retained. The retention is bound to increase, and palliative measures are liable to bring infection. The indications are the more imperative the younger the patient, and the more rapid the increase in size of the prostate. This suggests a malignant tendency. In a recent case the man of 54 refused the operation and passed through suppurating orchitis and other infectious processes entailed by the catheterization. The ninth year he succumbed to a cancer which had developed in the prostate. Early prostatectomy is indicated also without fail in cases of prostatism from chronic prostatitis without enlargement or only partial enlargement obstructing the passage.

Prensa Medica, Argentina

April 10, 1918, **4**, No. 31

103 *Prophylaxis of Tuberculosis. G. A. Alfaro.—p. 447.
104 Tumor in Occipital Lobe. A. Capurro and E. Dameno.—p. 450.
105 *Normal Beef Serum in Treatment of Anthrax. J. Penna, J. B. Cuenca and R. Kraus.—p. 455. Conclusion.
106 The Teaching of Obstetrics. Liberatio.—p. 456.

103. **Prophylaxis of Tuberculosis.**—[Alfaro was president of the Liga Argentina contra la Tuberculosis when he delivered this address. Since then he has been appointed chief of the entire public health service.] His idea of the primordial element in the campaign against tuberculosis is the instruction of the people, instruction in school, newspapers, magazines, lectures, moving pictures and by posters, with compulsory and secret notification of open cases, multiplication of preventoriums and medical and social assistance for the families of the tuberculous. Only when concrete advantages and gratuitous services are offered the families of the tuberculous can we hope for notification to be a success. He emphasizes that the direct prophylaxis of tuberculosis is the prophylaxis of all social ills and poverty, and hence it is a government function. The national, provincial and municipal authorities have it for their primordial duty to undertake this function with decision and energy. Philanthropic and other organizations can be only subsidiary and adjuvant to the state in this matter.

For the campaign to be effectual, the government must concentrate in a single hand all the resources and mediums of action. The government should organize a tuberculosis department for prophylaxis and assistance, either as an autonomous department or as a section of the public health service. This department should have a survey made of the entire country to locate the tuberculous, have all the institutions for the tuberculous amplified and multiplied, and the whole work of assistance for the tuberculous systematized. A special fund should be created for the purpose of combating tuberculosis, to which should be diverted certain tax moneys, inheritance taxes, liquor licenses, taxes on luxuries, etc., but its principal funds should be derived from compulsory insurance against disease, disability and old age which should be organized for the entire country. All educational institutions and their personnel should intensify the instruction of the people in hygiene, from the primary schools to the highest seats of learning.

105. **Normal Beef Serum in Treatment of Anthrax.**—This instalment completes this long report on 200 cases of anthrax treated with ordinary beef serum, without other measures, the malignant pustule and septicemia subsiding under it even more promptly, it is stated, than when anti-anthrax prepared serum is used. Before this serotherapy was instituted, the mortality had been 10 per cent. in 250 cases in the preceding ten years, while with the beef serum treatment the mortality was only 0.5 per cent. in 200 cases. Similar good results have been reported from Montevideo in eighteen cases, the outcome a greater success than with any other treatment known to date. The serum is injected subcutaneously in doses of 30 or 50 c.c., and this is repeated in twelve, twenty-four or thirty-six hours as the case may require. In very severe cases, the serum can be given by the vein. The serum is sterilized by heating it twice for half an hour at 55 C. Anaphylaxis is even more exceptional with beef serum than with horse serum.

Repertorio de Medicina y Cirugia, Bogota

April, 1918, **9**, No. 7

107 The Leukocyte Balance at Bogota. J. del C. Acosta.—p. 340.
108 Carrel Treatment of Open Osteomyelitis and Compound Fractures. R. Sanmartin.—p. 375.
109 Treatment of Talipes. J. A. Ceron.—p. 380.

Revista Medica del Rosario

May, 1918, **8**, No. 2

110 *Neuropathic Diathesis in Nurslings. P. Rueda.—p. 87.
111 *Metritis. E. Argonz.—p. 97.
112 *Cholecystectomy. J. B. Abalos.—p. 106. Conclusion.

110. **Neuropathic Diathesis in Infant.**—Rueda remarks that it is impossible to foretell how infants in this category will react to different elements in the milk. He insists, however, that sooner or later every infant reaches a point when cow's milk is borne well. A typical instance of neuropathic taint is described. The infant was over 2 months old but he could not stand his mother's milk or any breast milk. The fat in it seemed to be responsible for the pallor and syncopes which followed the feedings. These and absolute intolerance for breast milk subsided when the child was given sweetened skimmed cow's milk and later, sweetened breast milk, from which the fat had likewise been removed, with addition of some heterogenous albumin, until pure cow's milk could be substituted for the latter. The child has been thriving constantly during the six months since.

111. **Metritis.**—Argonz deplores that metritis is so often disregarded and complications are allowed to develop. Then even operations on the adnexa leave the cause—the metritis—to continue its ravages. No disinfectants applied to the mucosa of the uterus reach the microbes lurking in the depths of the glands, and hence vaccine therapy is indispensable as an adjuvant. He warns that curetting the pathologic mucosa often starts severe local and general infectious processes.

112. **Cholecystectomy.**—Abalos' technic was described in these columns, May 11, 1918, p. 1406. He here reports the outcome in 95 women and 5 men. The operation was done for gallstones in all and the 94 survivors have been com-

pletely and permanently cured. Of the 6 who died, myocarditis, probable cancer or other extraneous element was responsible for the fatality in all but 2. One of these succumbed to infection and hemorrhage the twelfth day; the other never recovered from the profound shock that followed the operation.

Revista de Medicina y Cirugia Pract., Madrid

April 21, 1918, **119**, No. 1503

113 *Stretching Nerve with Trophic Process. J. Blanc.—p. 65.

April 28, 1918, **119**, No. 1504

114 Pathology of the Skin in relation to Pathology of the Digestive Apparatus. E. de Oyarzabal.—p. 97.
115 Aphorisms of a Physician. S. V. de Castro.—p. 103.

113. **Stretching the Nerve in Treatment of Trophic Processes.**—Blanc analyzes a number of cases of trophic processes demonstrating the futility of operations when the tissues are incapable of defensive reactions on account of infection or defective circulation or other cause. The operation actually whips up the trophic process. Other cases show the prompt and lasting benefit when intervention is restricted to stretching the nerve. This was particularly evident in two cases of perforating ulcer of the sole. Clinical and functional restoration was complete in three weeks in the stretched nerve case while in the other case, treated with the usual measures, including resection of part of the foot, the disease continued a progressive course. He ascribes the benefit from stretching the nerve to action on the sympathetic nerve fibers, like the peripheral sympathectomy by resecting the nerve sheath of an artery. These sympathetic nerve fibers undergoing stretching have their functioning temporarily arrested, and thus the blood vessels are released from their constricting influence. The circulation in the region returns to normal or is even exaggerated, and the trophic process promptly starts to heal.

Revista Sud-Americana de Endocrinologia, Buenos Aires

February, 1918, **1**, No. 2

116 Test for Sugar in Presence of Albuminoids (in Meat Packing Industry). R. Sourbeck.—p. 45.

Semana Medica, Buenos Aires

Feb. 28, 1918, **25**, No. 9

117 *Diagnosis of Echinococcus Cysts. J. Bacigalupo.—p. 227.
118 Surgery in North America in 1917. R. Finochietto.—p. 230.
119 Mortality from Tuberculosis at Buenos Aires. Coni.—p. 233.
120 *Abdominal Pregnancy. M. G. Lascano and A. B. D'Atri.—p. 235.
121 Welfare Work at Buenos Aires. E. R. Coni.—p. 239. Cont'n.
122 *Preventive Vaccination against Diphtheria. C. Ponce.—p. 252.

March 14, 1918, **25**, No. 11

123 Notes on Antropology. J. Howard.—p. 281.
124 Infantile Mortality in Buenos Aires. E. R. Coni.—p. 290.
125 Surgery in North America in 1917. R. Finochietto.—p. 292.
126 *Sarcomas. G. P. Rebello.—p. 299.

117. **Diagnosis of Echinococcus Cysts.**—Bacigalupo says that the urticaria, which often accompanies echinococcus disease, is evidently a manifestation of absorption of toxins. It is possible to induce a characteristic reaction in sound skin by treating it with the toxic substances from an echinococcus cyst, if the subject is already sensitized by echinococcus disease. The most instructive reaction of the kind was obtained with fluid from an echinococcus cyst, the fluid kept in a cold place for a year and filtered just before using. One drop was injected by the intradermal technic. With a positive reaction, a papule forms with a red and painful halo and subcutaneous edema, the whole reaching its height in thirty-six or forty-eight hours. The painfulness may keep up for four or five days. The allergy responsible for the specific reaction may persist for two or three months after the cyst has been extirpated. In the normal subject there may be a papule, but it is not painful and soon subsides without redness of the skin. In one of the twelve cases described, all giving a positive reaction, the cyst had suppurated.

120. **Abdominal Pregnancy.**—The healthy woman of 40 had had five normal deliveries but the sixth ran a somewhat abnormal course with vomiting, pains and chills. With approaching term the enlargement seemed to be mainly on the left side. Twelve months passed without delivery and menstruation reappeared. The fifteenth month large quantities of a blood-stained mucous fluid were passed by the rectum during several days. The fetal membranes had evidently perforated into the rectum, and the abdomen returned to normal size. Four years later fetal bones were passed through the rectum, and Lascano and D'Atri then dilated the rectum and extracted the remainder of the bones of the fetus. The pocket containing them was the size of an orange with thick walls and putrid contents. It was cureted and swabbed with iodin; the next day it was cleaned of fecal matter, and smooth recovery followed.

122. **Prophylaxis of Diphtheria.**—Ponce relates that diphtheria has long been endemic at Mendoza but it has recently been brought under control by systematic use of a vaccine to immunize all in the environment of every case of diphtheria. This seems to confer a more lasting immunity than with the use of antitoxin, while his experience indicates that it is free from the drawbacks of the latter.

126. **Sarcomas.**—Rebello concludes from his study of sarcomas that there are only two distinct types, the round celled and the melanic. All others are merely modifications of these two types.

Siglo Medico, Madrid

April 6, 1918, **65**, No. 3356

127 Different Forms of Acute Otitis Media. E. Botella.—p. 262.

April 13, 1918, **65**, No. 3357

128 *Erysipelas. B. H. Briz.—p. 282. Conclusion.
129 *Typhus in Portugal. V. M. Cortezo.—p. 282. Commenced in No. 3354, p. 225.

128. **Serotherapy of Erysipelas.**—Briz reports that all the new-born with erysipelas at the Madrid Foundlings' Asylum have died, but he succeeded recently in saving three and another in his private practice, by giving three or four injections of 10 c.c. of a polyvalent antistreptococcus serum. By the second injection the patches had blanched and their spread been arrested. He has found doses of 20 c.c. effectual also in older children. He supplements the serotherapy by spraying or dressing the parts with 1 per thousand mercuric chlorid, and has the infants breast fed.

129. **Typhus in Portugal.**—Cortezo's report was summarized, June 29, p. 2000.

Gann, Tokyo

May, 1918, **12**, No. 1

130 *Incipient Gastric Cancer. K. Eto.—p. 1.
131 *Experimental Epithelioma in Fowls. K. Yamagiwa and S. Ohno. —p. 3.
132 Negative Results with Implantation of Mouse Cancer in Fowl Embryoes. K. Kiyono and Y. Sueyasu.—p. 9.
133 *Sarcoma of Femur. M. Nagayo and T. Kodama.—p. 10.

130. **Incipient Gastric Cancer.**—The minute malignant growth was discovered at necropsy in the stomach of the man of 76. It had evidently developed in an imperfectly healed ulcer, and the findings disproved a unicentric growth. Notwithstanding the apparently incipient stage of the malignant disease, there was metastatic infiltration in a lymph node nearby, and thrombosis in a small vein.

131. **Experimental Production of Cancer.**—Yamagiwa has continued his successful work in inducing malignant growths at will in experimental animals. He here reports, with Ohno, that three carcinomas were thus realized in experiments on forty-one fowls by injecting saturated scarlet red oil into the wall of the fallopian tube. From one to five of these injections were made, each requiring a separate laparotomy. This is a proportion of 7.3 per cent. Nothing suggesting a primary focus elsewhere could be detected in any of the fowls. Some were quite young. (Yamagiwa's success in experimental production of cancer was described editorially in THE JOURNAL, June 16, 1917, p. 1818).

133. **Sarcoma of Femur.**—The chondroblastic sarcoma in the lower end of the femur of a boy of 14 compelled amputation two months after the first symptoms. Three months later symptoms in the right chest attracted attention and the lad succumbed in three months to progressive dyspnea. The rapid development of the metastatic tumor in the lung and its huge size were remarkable features of the case.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

April 13, 1918, **1,** No. 15

134 *Varicocele of the Orbit. W. P. C. Zeeman.—p. 986.
135 *Gonorrhea in the Female. T. Passtoors.—p. 995.
136 Case of Chyluria. N. J. van Dam.—p. 1007.

134. **Varicocele of the Orbit.**—The man had complained for six years that his right eye felt as if it were pushed forward, but only close inspection showed asymmetry. The protrusion seemed more pronounced when he stooped over. Zeeman explains this intermittent exophthalmos as the effect of a varicocele. The enlargement of the veins of the orbit is accompanied in all such cases by enlargement of the entrance into the sinus cavernosus. This explains the enophthalmos when the head is held in certain positions. He gives six roentgenograms of his case and discusses operative treatment. Some have injected an iron astringent, others have excised the varicose veins, but the results of the latter have not always been very encouraging. The ultimate outcome in the cases is not known. Removal of the convolute of veins may be indicated when there seems to be danger of injury of the optic nerve or there is recurring hemorrhage in the orbit.

135. **Gonorrhea in the Female.**—Passtoors discusses in turn and in detail the diagnosis and treatment of gonorrheal lesions in the urethra and vicinity, in the uterus and its annexes, and in the paragenital region. The question as to when a gonorrheal uterine lesion is cured is easier for the venereologist to answer than the gynecologist, as the former usually has both man and wife in his care, and the one serves as a control of the other. When Passtoors finds no more gonococci in the secretions on repeated examinations then he makes a provocative injection of vaccine, the first day 50, the second day 100 and the third day 200 millions. The fourth day secretions from the uterus, obtained with a blunt curet, are inoculated on culture mediums and smears are made. The cultivation of the gonococci is materially facilitated by having the secretions taken at the laboratory by the bacteriologist and placed at once in the incubator, without any chance for chilling the gonococci.

Hospitalstidende, Copenhagen

May 1, 1918, **61,** No. 18

137 *Arc Light Treatment of Osteitis. O. Strandberg.—p. 545.
138 Narcolepsy. V. Askgaard.—p. 556.

137. **Arc Light Treatment of Osteitis.**—Strandberg reports the cure of nine patients under carbon arc light exposures for chronic osteitis of the mastoid or temporal region consecutive to middle ear disease. The course took up to nine months in some. The benefit was equally pronounced in the tuberculous and the apparently nontuberculous cases with a protracted course.

Ugeskrift for Læger, Copenhagen

April 11, 1918, **80,** No. 15

139 *Uveo-Parotid Fever. S. Bang.—p. 571.
140 Self-Regulating Apparatus for Adding Saline in Infusing Arsphenamin. O. Jersild and M. B. Pedersen.—p. 578.
141 *Blood in the Stools of the Tuberculous. P. Bogason.—p. 582.

139. **Chronic Parotitis with Iritis and Facial Paresis.**—Bang says that fifteen cases of this clinical picture have been published since attention was first called to it in 1905 by a Danish physician. Bang adds two more cases to the list, in a boy of 13 and a girl of 15, and tabulates the findings in the total seventeen cases. The subchronic iridocyclitis and parotitis extend over months, with low, remittent fever. Both eyes are usually affected and in not less than five cases the outcome was total blindness. The parotitis was always bilateral, and in six cases there was simultaneous tumefaction of the lacrimal glands. This is without precedent except in Mikulicz' disease (bilateral chronic parotitis and dacryoadenitis). Fridericia has recently asserted that we have every reason to accept Mikulicz' disease as a form of pseudoleukemia, as all stages of transition have been observed between the pure Mikulicz disease and extensive lymphomatosis. This throws light on the uveoparotitis cases, especially those with lymphadenitis. The enlarged spleen and the febrile course are analogous to the febrile forms of pseudoleukemia. The nodules in the iris may likewise possibly be lymphomatous infiltrations. Schou has reported a case apparently typical except that the parotid glands seemed to be normal. The finding of giant cells and of epitheloid cells in the nodules in the iris in four cases was assumed at the time to indicate a tuberculous origin, but Bang advises classing the uveoparotid syndrome—until further light is obtained—in the pseudoleukemia group rather than as tuberculosis. In any event, it is most certainly not a disease *sui generis.*

141. **Blood in the Stools of the Tuberculous.**—Bogason found that purulent sputum gave constantly a positive benzidin reaction for occult blood. Consequently swallowed sputum may be responsible for positive findings in the stools, and intestinal lesions need not necessarily be incriminated.

Upsala Läkareförenings Förhandlingar

1917, **22,** No. 3

142 *Action of Alcohol on Muscles. C. Gyllenswärd.—p. 141.
143 Nutritional Tests with Sugar on Surviving Frog Muscle. C. Gyllenswärd.—p. 162.
144 *Accidental Heart Murmurs. E. Kylin.—p. 188.
145 Operative Cure of Traumatic Epilepsy. A. Troell.—p. 213.
146 *Rupture of Spleen. G. Nyström.—p. 221.

142. **Influence of Alcohol on Muscular Work.**—Gyllenswärd has applied Blix's test of the orientation capacity of the hand as a means of determining the amount of disturbance induced by small amounts of alcohol. The test requires coordinating action of several groups of muscles, and thus is more exacting than simple ergograph tests. The test amount of alcohol was always 5 c.c., taken before rising, and the exercise was done fifty minutes later. The subject is seated with his back against the back of the chair, his right arm hanging vertically, holding a pencil. A paper screen stands at arm's length before him, and in the center of the paper is a mark. The right arm is lifted, without moving otherwise, and the mark in the paper is touched. Then the arm drops back to its former position. The eyes are then closed and the procedure is repeated. A series of such movements are done alternately with eyes open and shut. The distances between the central dot and the other marks on the paper are added together and the sum divided by the number of times the attempt was made. This gives an index of the steadiness of the muscles involved. There was always a falling off of from 20 to 50 per cent. when the alcohol was taken. Several control solutions were used, so the subject did not know whether he was being given the alcohol or not on the day in question.

144. **Accidental Heart Murmurs.**—Kylin analyzes previous publications on this subject and reviews his own experience with 513 apparently healthy recruits, and 300 male hospital inmates of a corresponding age. Among the recruits, 18.1 per cent. presented these accidental murmurs, and 28 per cent. of the hospital inmates. In practically all with accidental heart murmurs the blood pressure was slightly above normal, while the capacity for physical endurance was almost invariably reduced to a certain extent.

146. **Rupture of Spleen.**—Nyström describes three cases in which intestinal paresis appeared as a complication of rupture of the spleen. He has found only one case on record of ileus from this cause. The spleen was sutured or tamponed, and all recovered, but the first two patients required a second operation to correct the ileus. Nyström reports further a case of rupture of the spleen nearly its entire length. He saved the spleen by tamponing alone, but has worked out on the cadaver a more certain method, namely, by tying a ligature around the pedicle, close to the spleen, with other ligatures around the spleen itself, like barrel hoops, each held firm in place by being knotted at right angles to the ligature around the pedicle. All this can be prepared before the abdomen is opened, so that the whole will fit like a bag over the spleen. The only tying necessary then will be the stout catgut passing around the pedicle. Possibly a tampon might be held in place by rubber bands passed around the spleen. A stout silk thread through each band could stretch it enough for it to be cut when the time came to remove it.